Final Supplemental Watershed Plan No. 1 and Environmental Assessment for the Utaba Dam Rehabilitation Project

North Fork Ogden River Watershed
Weber County, Utah



PREPARED BY

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

IN COOPERATION WITH

Sponsoring Local Organization (SLO):
Weber County

August 2026

Unique Identification Number: SEAXX-005-53-049-1392303891

Title and Document Status: Final Supplemental Watershed Plan No. 1 and Environmental Assessment for the Utaba Dam Rehabilitation Project

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

Cooperating Agencies: Environmental Protection Agency (EPA)

Sponsoring Local Organization: Weber County, Utah

Authority: This Watershed Project Plan and Environmental Assessment (Plan-EA) has been prepared under the authority of NRCS Watershed Protection and Flood Prevention Act (16 U.S.C. Section 1001 et seq.) 1954; (Public Law 83-566) as amended and in accordance with the National Environmental Policy Act of 1969 (NEPA), PL 91-190, as amended, and in accordance with the Guidance for Conducting Analyses Under the Principles, Requirements, and Guidelines for Water and Land Related Resources implementation Studies and Federal Water Resource Investments (DM 9500-013) also known as PR&G.

Abstract: The Final Supplemental Watershed Plan-Environmental Assessment (Plan-EA) for the Utaba Dam Rehabilitation Project evaluates alternatives to address significant structural and safety deficiencies at the Utaba Dam located in the North Fork Ogden River Watershed, Weber County, Utah. Originally constructed in 1962 under the PL-566 program for flood control, the dam now requires rehabilitation due to a reclassification as a high hazard structure and a range of issues including spillway degradation, seepage, and sedimentation. The Plan-EA was prepared by the USDA Natural Resources Conservation Service (NRCS), in cooperation with Weber County and the Environmental Protection Agency (EPA), in compliance with NEPA, PR&G, and other applicable regulations. Two primary alternatives were considered: a No Action Alternative and a Structural Rehabilitation Alternative. The Preferred Alternative proposes structural upgrades to meet Utah State and NRCS Dam Safety standards, preserve downstream flood protection, and extend the service life of the dam by 50 years. Environmental, cultural, and socio-economic impacts were assessed in detail, and the project is expected to result in significant public safety benefits while maintaining ecosystem services in the watershed.

The No Action Alternative and the Structural Rehabilitation Alternative were analyzed. The Structural Rehabilitation Alternative is the Preferred Alternative. This alternative would consist of upgrading Utaba Dam to meet Utah State and NRCS Dam Safety standards while maintaining water detention capacity.

The probable cost (design and construction) for the Preferred Alternative is $6,204,000.

Comments: NRCS has completed this Final Plan-EA in accordance with the National Environmental Policy Act (NEPA) and NRCS guidelines and standards.

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

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

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

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

Fax: (202) 690-7442; or

Email: program.intake@usda.gov.

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Ancestral Land Acknowledgement: The project proposed and evaluated in this Watershed Plan Environmental Assessment is located on the ancestral homelands of the Northwest Band of the Shoshone Nation, Ute Indian Tribe of the Uintah and Ouray Reservation, Skull Valley Band of Goshute Indians, Eastern Shoshone Tribe of the Wind River Reservation, Confederated Tribes of the Goshute Reservation, and Shoshone-Bannock Tribes of the Fort Hall Reservation, who hold ancestral land and traditional use/traditional cultural property claims within and in the vicinity of the project area. USDA-NRCS is committed to uplifting these lands as well as the community members from these Tribes.

SUPPLEMENTAL WATERSHED PLAN NO. 1 AND ENVIRONMENTAL ASSESSMENT FOR THE UTABA DAM REHABILITATION PROJECT WATERSHED WORK PLAN AGREEMENT

between

Weber County
(Referred to herein as the sponsor)

and the

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

Whereas, there has been developed through the cooperative efforts of the Sponsors and NRCS a Supplemental watershed project plan No. 1 executed on May 11, 1959 for works of improvement for the North Fork Ogden River Watershed, State of UT, due to structural deficiencies and flood damages, hereinafter referred to as the watershed project plan or plan, which plan is annexed to and made a part of this agreement.

Whereas, application has heretofore been made to the Secretary of Agriculture by the sponsors for assistance in preparing a plan for works of improvement for Utaba Retarding Dam, North Fork Ogden River 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 supplemental watershed project plan and environmental assessment for works of improvement for Utaba Retarding Dam, North Fork Ogden River 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 sponsors 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 (52 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 sponsors will acquire such real property as will be needed in connection with the works of improvement. The amounts and percentages of the real property acquisition costs to be borne by the sponsors and NRCS are as shown in the cost-share table in section 5 hereof.

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

4. **Uniform Relocation Assistance and Real Property Acquisition Policies Act.** The sponsors hereby agree 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- North Fork Ogden River Watershed Agreement Cost-Share Percentages & Amounts shows the estimated cost-share percentages and amounts for Watershed Project Plan implementation.

Table 1. North Fork Ogden River Watershed Agreement- Cost-Share Percentage and Amounts

Watershed Works of Improvement	NRCS Cost	%	Sponsors Cost	%	Total Cost
Cost-Sharable Items					
Dam Rehabilitation 1/	$3,251,300	65%	$1,750,700	35%	$5,002,000
Subtotal: Cost-Sharable Costs	**$3,251,300**		**$1,750,700**		**$5,002,000**
Non-Cost-Sharable Items 3/					

Watershed Works of Improvement	NRCS Cost	%	Sponsors Cost	%	Total Cost
NRCS Technical Assistance/Engineering	$1,001,000	100%	$0	0%	$1,001,000
Project - Construction Administration	$51,000	100%	$0	0%	$51,000
Land Acquisition/Permits			$150,000	100%	$150,000
Subtotal: Non-Cost-Sharable Costs	**1,052,000**		**$150,000**		**$1,202,000**
Grand Total:	**$4,303,300**		**$1,900,700**		**$6,204,000**

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

2 - Investigation of the watershed project area indicates that no displacements will be involved under present conditions. However, in the event that displacement becomes necessary at a later date, the cost of relocation assistance and payments will be cost-shared in accordance with the percentages shown.

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

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

7. **Floodplain Management.** Before construction of any project for flood prevention, the sponsors must agree to participate in and comply with applicable Federal floodplain management and flood insurance programs. The community of Weber County, Utah participates in the flood insurance program and is currently in good standing.

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

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

10. **NRCS Assistance.** This agreement is not a fund-obligating document. Financial and other assistance to be furnished by 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 sponsors 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 sponsors have 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 sponsors in writing of the determination and the reasons for the deauthorization of project funding, together with the effective date. Payments made to the sponsors or recoveries by 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 sponsors having specific responsibilities for the measure involved.

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

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

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

16. **Nondiscrimination Provisions.** In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or

administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, 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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By signing this agreement, the recipient assures the USDA that the program or activities provided for under this agreement will be conducted in compliance with all applicable Federal civil rights laws, rules, regulations, and policies.

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

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

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

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

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

Certification:

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

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

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

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

(4) Notifying the employee in the statement required by paragraph (1) that, as a condition of employment under the grant, the employee must:
    (a) Abide by the terms of the statement; and
    (b) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction.

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

(6) Taking one of the following actions, within 30 calendar days of receiving notice under paragraph (4) (b), with respect to any employee who is so convicted.
    (a) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
    (b) Requiring such employee to participate satisfactorily in a drug

abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency.

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

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

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

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

A. The sponsors certify to the best of their knowledge and belief, that—

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

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

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

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

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

A. The sponsors certify 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 sponsors are unable to certify to any of the statements in this certification, such prospective participant must attach an explanation to this agreement.

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

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

23. **Signatures**

Sponsors: Weber County	
By:	
Title: Weber County Commission Chair	
Date: 07/21/2026	
Address: 2380 Washington Blvd, Ste. 360, Ogden, UT	Zip Code: 84401
The signing of this plan was authorized in a public meeting of the governing body of Weber County adopted at a meeting held on 07/21/2026.	
Address Same as above	
Secretary [or other Title]	
Date: 07/21/2026	

USDA United States Department of Agriculture Natural Resources Conservation Service	
Approved By: TRAVIS MOTE Digitally signed by TRAVIS MOTE Date: 2026.08.20 15:09:25 -06'00'	
Title: NRCS State Conservationist	
Date:	

Summary: Office of Management and Budget Fact Sheet

S.1 Title of Proposed Action

Utaba Dam Rehabilitation Supplemental Watershed Plan No. 1 and Environmental Assessment

S.2 Location

S.2.1 County, State

Weber County, Utah

S.2.2 Congressional District

First Congressional District

S.3 Organizations and Agencies

S.3.1 Sponsoring Local Organizations (SLOs)

Weber County is the SLO for this project. There are no Co-Sponsoring Local Organizations.

S.3.2 Cooperating Agency/Agencies

The cooperating agency on this project is the Environmental Protection Agency (EPA).

S.4 Authority

This Supplemental Watershed Plan and Environmental Assessment (Plan-EA) has been prepared under the authority of the Natural Resources Conservation Service (NRCS) Watershed Protection and Flood Prevention Act (16 U.S.C. Section 1001 et Seq.) 1954; (Public Law 83-566), as amended and in accordance with the National Environmental Policy Act of 1969 (NEPA), PL 91-190, as amended. The purposes of which the project is planned is Watershed Structure Rehabilitation.

S.5 Purpose and Need for Action

The purpose of the project is to address existing deficiencies at Utaba Dam and reduce the current breach risk and conform with all necessary safety standards

The need for the project is to reduce the risk to life and property, eliminate structural vulnerabilities, and extend the service life of the dam and to allow it to continue to provide protection from floods by removing structural deficiencies at Utaba Dam.

S.6 Description of the Preferred Alternative

The Structural Rehabilitation Alternative would upgrade Utaba Dam to meet Utah State and NRCS Dam Safety standards while maintaining water detention capacity. The dam would be raised 4 feet to provide additional freeboard for the Probable Maximum Flood (PMF) event. The undersized and degraded principal spillway would be replaced, and the auxiliary spillway would be relocated to the left abutment. A downstream filter and drain system would address seepage issues, and a new principal spillway would prevent blockages from beaver activity while allowing full reservoir

drainage. A chimney and blanket filter system would be installed to prevent soil migration. Sediment management measures include removing accumulated sediment and reducing sediment buildup by upgrading the principal spillway. To meet safety standards, modifications could include flattening slopes, adding a stability berm, or replacing weak dam material. A control gate on the principal spillway would allow water release to be restricted, enabling the reservoir to serve as a wildfire suppression resource as well as facilitate inspection of the principal spillway conduit.

S.1 Resource Information

Table S-1 identifies relevant resource information for the project area.

Table S-1: Existing Resource Information

Resource	Description
Latitude/Longitude	**Utaba Dam:** 41°23'12.59"N/ 111°54'35.29"W Source: Google Earth
Elevation	Elevation at the site is approximately 5,630 feet
Hydrologic Unit Code (HUC-12)	North Fork Ogden River HUC: 160201020304
Climate	**Summer average high: 80 degrees F** **Winter average low: 24 degrees F** **Source: (**weatherworld.com)
Topography	Utaba Reservoir, North Fork Park, Camp UTABA
Annual Precipitation	An average of 23 inches of precipitation
Watershed Area	18,208 acres
Land Use	Urban/Residential, Riparian, Water, Forested, Other
Land Ownership	Federal (0 Acres, 0%), state (0 Acres, 0%), County (39.3 Acres, 64%), and private (21.7 Acres, 36%)
Population (U.S. Census 2020)	Weber County: 262,223 (2020)
Demographics (U.S. Census 2020)	Weber County White: 83.87% African American: 1.12% American Indian: 0.67% Asian: 1.47% Native Hawaiian/Pacific Islander: 0.24% Two or More Races: 7.48% Other Race: 5.16%

S.8 Alternative Plans Considered

Alternatives that were analyzed in detail include the No Action Alternative (FWOFI), and two Action Alternatives namely, Action Alternative 1 – Structural Rehabilitation Alternative and Action Alternative 2 – Decommissioning Alternative. The No Action Alternative (FWOFI) represents a baseline condition if no Federal funds were provided. The Structural Rehabilitation Alternative is the Locally Preferred Alternative, Environmentally Preferred Alternative (from NEPA), and Economically Preferred Alternative (Nationally Economically Efficient [NEE]). It would upgrade Utaba Dam to meet Utah State and NRCS Dam Safety standards while maintaining water detention capacity. The dam would be raised 4 feet to provide additional freeboard to allow safe conveyance of the Probable Maximum Flood (PMF) event. The principal spillway would be replaced, and the auxiliary spillway would be relocated to the left abutment. A filter and drain system would address seepage issues. A chimney and blanket filter system would be installed to prevent soil migration. Sediment management measures include potential removal of accumulated sediment and reducing sediment buildup by upgrading the principal spillway. The Decommissioning is a nonstructural alternative as described in DM 9500-013(4)(f)(2)(1)(c). It would require the complete removal of the dam, removal and/or stabilization of accumulated sediment, reestablishment of channels through the reservoir area, and site restoration/revegetation. Mitigation measures were identified for potential impacts under the Preferred Alternative.

The Proposed Action Alternatives were created from many considered management measures to create the Preferred Alternative based on a matrix consisting of the requirements of the Watershed and Flood Prevention Operations Program (PL 83-566), NEPA, and the Guiding Principles of the PR&G using an ecosystem services framework.

S.9 Project Costs and Funding Source

The estimated cost for the proposed project is summarized in Table S-2.

Table S-2: Estimate Project Costs

Item	NRCS PL 83-566 Funds	Other Funds*	Total
Construction	$3,251,300	$1,750,700	$5,002,000
Engineering	$1,001,000	$0	$1,001,000
Relocation	$0	$0	$0
Real Property Rights	$0	$150,000	$150,000
Project Administration	$51,000	$0	$51,000
Total	**$4,303,300**	**$1,900,700**	**$6,204,000**
Annual O&M (Non-Fed)	$0	$8,559	$8,559

S.10 Net Economic Benefits

The estimated average annual economic benefits for the Preferred Alternative are summarized in Table S-3. The Preferred Alternative is also the NEE Alternative for the project.

Table S-3: Estimate Project Benefits

Benefit Category	Total Annual Benefits	Total Annual Costs	Benefit-Cost Ratio*	Net Economic Benefits
Structure, Contents, & Vehicles	$831,849	--	--	--
Roads/Crossings	$42,009	--	--	--
Sediment	$19,500	--	--	--
Construction	--	$200,200	--	--
Engineering	--	$40,700	--	--
Real Property	--	$6,100	--	--
Admin. Costs	--	$2,100	--	--
O&M/Yr	--	$8,559	--	--
Total	$893,358	$257,659	3.47	$635,699

*discount rate used in benefit-cost analysis was 3.00%

There are approximately 3,000 direct beneficiaries living in small, widely scattered rural communities near the project area. The Structural Rehabilitation Alternative protects 69 residences and 31 outbuildings. No commercial structures or public properties were identified in the floodplain. There were 22 roadways downstream within the 500-year inundation zone. Additionally, the Preferred Alternative provides protection for about 4,000 to 9,000 vehicles and their occupants who utilize the roads downstream of Utaba Dam daily (using an average of two people per vehicle results in up to 18,000 motorists). This alternative reduces the threat of loss of access and loss of emergency services for downstream properties and property owners. It provides downstream flood prevention for the residents in the area, as well as those working, recreating, or traversing within the downstream floodplains, for an additional 50 years. Liability is eliminated associated with continuing to operate a dam that does not meet current Utah and NRCS safety and performance standards, would retain the existing aquatic and terrestrial habitat around the dam, would leverage federal resources to install the planned works of improvement, and would meet current Utah and NRCS safety and performance standards for a high hazard potential dam.

S.11 Period of Analysis & Funding Schedule

The period of analysis is 52 years. This includes a 2-year construction period, and a 50-year evaluated life. A funding schedule is shown in the table below.

Fiscal Year	PL 83-566	Other Funds	Total
2026	$526,000	$75,000	$601,000
2027	$3,777,300	$1,825,700	$5,603,000

*Structure life 50-years, 2-year implementation, price base 2025.

S.12 Project Life

The life of the project is estimated to be 50 years following 2 years of construction.

S.13 Environmental Impacts

Table S-4 identifies the resources of concern and potential environmental impacts associated with implementation of the Preferred Alternative. Resources not impacted by the project are not listed in this table.

Table S-4: Summary of Resource Concerns and Potential Environmental Impacts

Resource of Concern	Summary of Concern/Affect	Anticipated Environmental Effects Summary
Air Quality	Direct Temporary Impact	Temporary impacts to air quality may occur due to emissions and dust from construction equipment and excavation activities
Breach Analysis and Dam Hazard Classification	Direct Permanent Benefit	Breach risks would be significantly reduced and the dam would be brought into compliance with NRCS and Utah State Dam Safety standards, reducing its hazard classification.
Consequences of Dam Failure	Direct Permanent Benefit	The consequences of the current dam's imminent failure would be mitigated with a far safer, far more reliable structure.
Cultural and Historic Resources	No Adverse Effect	There would be no adverse effects to any NRHP eligible cultural or historic sites in the project area. An additional benefit would be to all eligible properties downstream which would be protected from the No Action/Indirect APE breach event under the Preferred Alternative.
Ecosystem Services	Direct Permanent Benefit	The alternative will improve provisioning, regulating, and cultural ecosystem services in the watershed. More detail is found in chapter 4 of the Plan-EA.
Fish and Wildlife	Indirect Permanent Benefit Direct Temporary Impact	The project may have temporary impacts to fish and wildlife communities from construction activities including noise. However, an indirect permanent benefit would result from the improved water retention and quality conditions, improving aquatic habitat.
Floodplain Management	Direct Permanent Benefit	Project measures would mitigate the current high risks of dam breach through improved spillway design.
Geology	Direct Permanent Benefit	Seismic/Static stability of the dam would improve along with structural upgrades.
Groundwater	Direct Permanent Benefit	Groundwater seepage would be controlled, improving dam stability.

Resource of Concern	Summary of Concern/Affect	Anticipated Environmental Effects Summary
Invasive Species	Indirect Temporary Impact	Due to construction activities, there is potential for the spread of invasive plant species.
Land Use	Direct Permanent Benefit Direct Temporary Impact	Land use conditions would remain largely unchanged but would be improved for future sustainability. There would be temporary impacts during construction as North Fork Park would be utilized as a staging/storage/borrow area but would be restored. Camp UTABA could not operate normally during construction either.
Migratory Birds and Bald/Golden Eagles	Indirect Temporary Impact	There are migratory birds within the project area which may be temporarily affected due to construction activities including noise. The same impacts would occur to any eagles present as well. No long-term impacts.
Natural Areas	No Impact	There would be no change to any natural areas.
Noise	Direct Temporary Impact	There would be temporary noise generation/impacts as a result of construction activities.
Operation, Maintenance, and Replacement Status of the Dam	Direct Permanent Benefit	OM&R costs would stabilize with a fully rehabilitated, fully functional Utaba Dam.
Parklands	Direct Temporary Impact	North Fork Park would be used as a staging/storage/borrow area during construction but would be restored to pre-construction conditions by Weber County following the completion of construction.
Potential Modes of Dam Failure	Direct Permanent Benefit	The risk of dam failure would be minimized with improved structural integrity.
Public Health and Safety	Direct Permanent Benefit	Public safety would be greatly improved by addressing the dam's deficiencies and reducing the risk of a breach.
Reasons the Structure Fails to Meet NRCS and Utah State Dam Safety Standards	Direct Permanent Benefit	The identified deficiencies of the Utaba Dam would be mitigated through structural rehabilitation measures that would bring the structure into compliance with NRCS and Utah State Dam Safety criteria.
Riparian Areas	Direct Temporary Impact	Riparian areas would be temporarily disturbed during construction but will be restored afterwards to pre-construction conditions.
Sedimentation Rates	Direct Permanent Benefit	Sediment rates would decrease as a result of rehabilitation.

Resource of Concern	Summary of Concern/Affect	Anticipated Environmental Effects Summary
Socioeconomics	Direct Permanent Benefit Direct Temporary Benefit	Flood damage cost reduction would occur as a result of the dam's rehabilitation. Furthermore, there would be temporary economic benefits that would result from job creation during construction.
Scenic Beauty	Direct Temporary Impact	Scenic beauty would be maintained in current condition following dam rehabilitation and the restoration of North Fork Park. However, the viewshed would be temporarily impacted during construction.
Soils Resources	Direct Permanent Benefit Direct Temporary Impact	Soil erosion would be reduced with better embankment protection and a reduced risk of dam failure, creating a permanent benefit. There would be a temporary increase in soil erosion created during construction.
Threatened and Endangered Plant and Animal Species	Indirect Temporary Impact	The project would have the potential to generate a short-term noise disturbance to any WYBC individuals during construction but would not impact any suitable habitat.
Transportation	Direct Permanent Benefit	Would create improved protection of downstream transportation infrastructure against flooding.
Water Quality	Indirect Temporary Impact	Short-term impacts on water quality during construction may occur. The North Fork Ogden River would continue to be impaired for dissolved oxygen at current levels.
Wetlands/WOTUS	Direct Permanent Impact	Some wetlands (up to 2.64 total acres of aquatic resources, including wetlands, open water, and linear features) would be disturbed during construction. Compensatory mitigation would occur where necessary and a CWA 404 permit would be obtained prior to construction.

S.14 Major Conclusions

The implementation of the Preferred Alternative, although having some adverse temporary and permanent impacts to resource concerns, would provide far more permanent benefits to the natural, economic, and human environment. Major improvements to Utaba Dam would be made, providing protection to the watershed from severe flood events.

S.15 Areas of Controversy

No significant issues or controversy are anticipated resulting from implementation of the Preferred Alternative. This has been confirmed through reasonable and good faith consultation efforts with SHPOs, Tribes, and Cooperating Agencies.

S.16 Issues to Be Resolved

The following issues would be resolved for the implementation of the Preferred Alternative:

(i) Completing final permitting including:
   a. Section 404 permitting wetland disturbance
   b. Stream Alteration permits
   c. UPDES permits

S.17 Evidence of Unusual Congressional or Local Interest

There is no evidence of unusual congressional or local interest.

S.18 In Compliance

This Supplemental Plan-EA is in full compliance with all public laws, statutes, and Executive Orders governing the development of water resource projects.

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0.0 Changes Requiring a Supplement

The original Utaba Dam Watershed Plan (originally titled the North Fork Ogden River Watershed Plan) was created in 1962 for the authorized purpose of flood protection under the PL 83-566 program. After the dam was constructed, it was assigned a "moderate" hazard potential classification by the State of Utah, which is equivalent to a "significant" hazard potential classification by the NRCS. Development downstream of the dam has resulted in the dam now being classified as a "high" hazard dam due to a greater potential for loss of life. Due to multiple structural issues with the dam and the presence of homes and businesses within the breach inundation zone of the dam, there exists the potential for loss of life should the dam fail. A plan supplement is required to bring the dam into compliance with the state's dam design standards.

The selected alternative is to structurally rehabilitate the dam which will address the following eleven deficiencies:

- Undersized Principal Spillway
- Concrete of Principal Spillway Likely Degraded by Acidic Soil Conditions
- Auxiliary Spillway Structurally Failing
- Auxiliary Spillway Undersized/Insufficient Freeboard
- Inadequate Crest Width
- Uncontrolled Seepage Around Principal Spillway Outlet Conduit
- Uncontrolled Seepage and High Groundwater at Toe of the Dam
- Permanent Detention of Water vs. Original Design Criteria Assuming Short Periods of Water Detention
- Unknown compatibility between zones of differing material in the Dam
- Decreased Sediment and Storage Capacity due to sediment accumulation
- Seismic and Static Stability of the Dam Currently Unknown

These deficiencies were utilized to formulate a final array of alternatives that were considered as part of this Supplemental Watershed Plan-EA in order to ultimately determine which alternative is preferred and selected for implementation by NRCS.

1.0 Watershed Planning Background

This watershed plan documents the planning processes and results of those processes initiated and conducted by the Natural Resources Conservation Service (NRCS) and Weber County in support of achieving dam compliance within the North Fork Ogden River watershed.

1.1 Authority

This Watershed Plan-EA and rehabilitation project has been prepared under the authority of Section 14 of the Watershed Protection and Flood Prevention Act of 1954, Public Law (PL) 83-566, as amended (68 Statute 666 as amended: 16 USC Section 1001 et. seq); in accordance with the National Environmental Policy Act of 1969 (NEPA), PL 91-190, as amended (42 USC 4321 et seq); and in accordance with the Principles, Requirements, and Guidelines for Water and Land-Related Resource Implementation Studies and Federal Water Resource Investments (PR&G), DM 9500-013. This project has been prepared for the authorized purpose of watershed structure rehabilitation.

1.2 Sponsor

The non-federal Sponsoring Local Organization (SLO) for this Plan-EA is Weber County, Utah. The sponsor meets the relevant SLO responsibilities as outlined in 390 National Watershed Program Manual (NWPM) section 500.11.

1.3 Cooperating Agencies

The NRCS sent requests to the following state, federal, and Tribal agencies requesting to be a cooperating agency under NEPA on this project as part of the external scoping process.

- Environmental Protection Agency (EPA)
- U.S. Bureau of Reclamation (USBR)
- U.S. Fish and Wildlife Service (USFWS)
- Bureau of Land Management (BLM)
- U.S. Forest Service (USFS)
- U.S. Bureau of Reclamation (USBR)
- U.S. Army Corps of Engineers (USACE)
- State Agencies via the RDCC (agency scoping notice)
- Utah State Historic Preservation Office (SHPO)
- All Tribes identified in section 7.1.2.2

The following agencies accepted the invitation to become a cooperating agency on this project:

- Environmental Protection Agency (EPA)

1.4 Planning Area

1.4.1 Selected Watershed

The project is being planned for the North Fork Ogden River watershed, located in Weber County, Utah in the first congressional district. The planning area overview map and watershed map Figure 1-1 below identifies the target watershed in its surrounding context.

The watershed planning area is comprised of one Hydrologic Unit Codes (HUC), 12-digit hydrologic unit code (HUC-12) 160201020304. The watershed map below identifies the project area within the relevant HUCs.

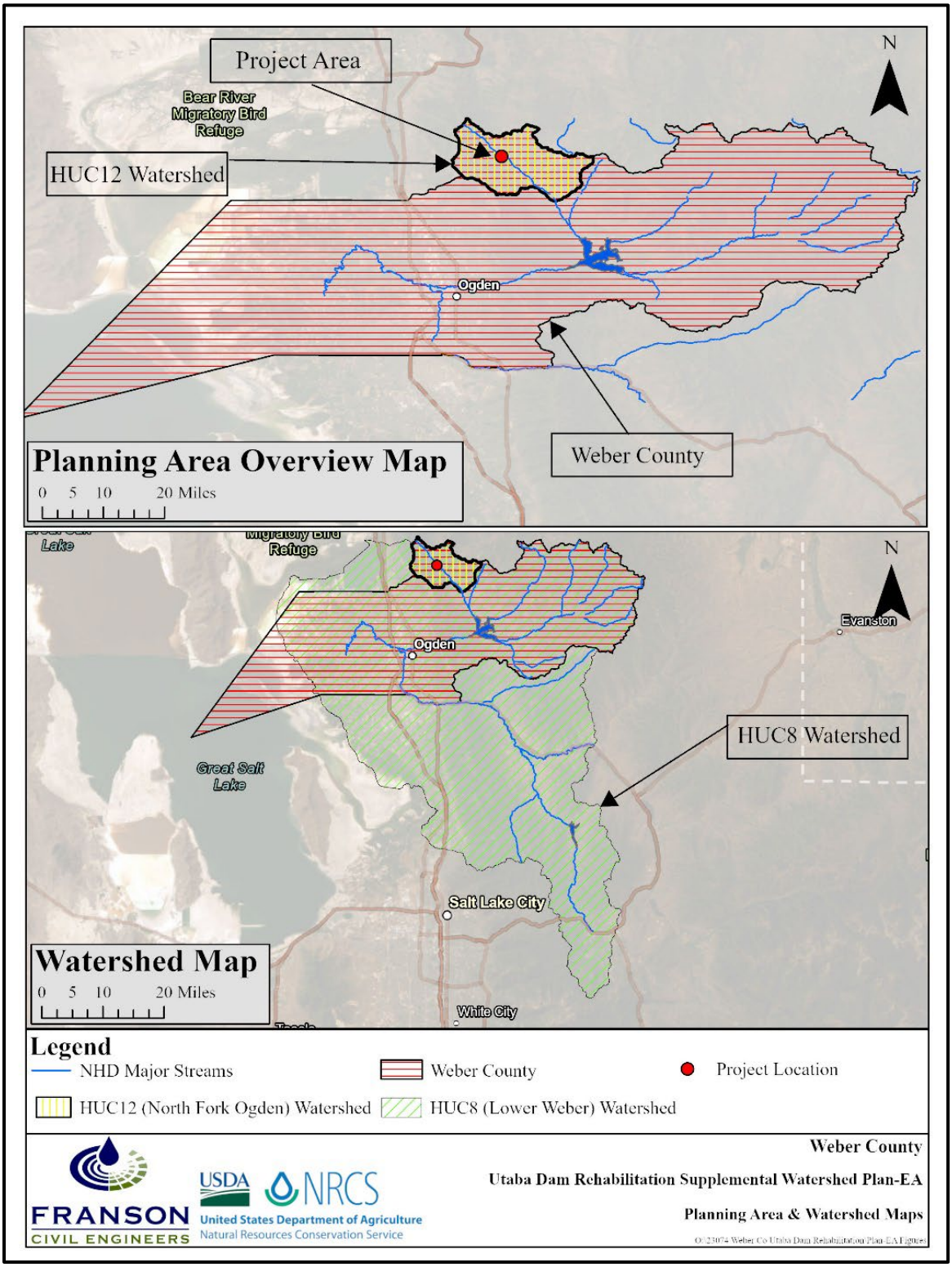

Figure 1-1: Planning Area and Watershed Maps

1.4.2 Study Area

The project study area, also known as the project footprint or project area, is the boundary within which the proposed project would be installed and the area where pertinent resource studies were conducted. A map of the project study area is included below, the ½ mile buffer was used for biological surveys for potential Threatened species under the Endangered Species Act (ESA). All other surveys (cultural, geotechnical, aquatic resources, etc.) were conducted within the defined study area exclusively.

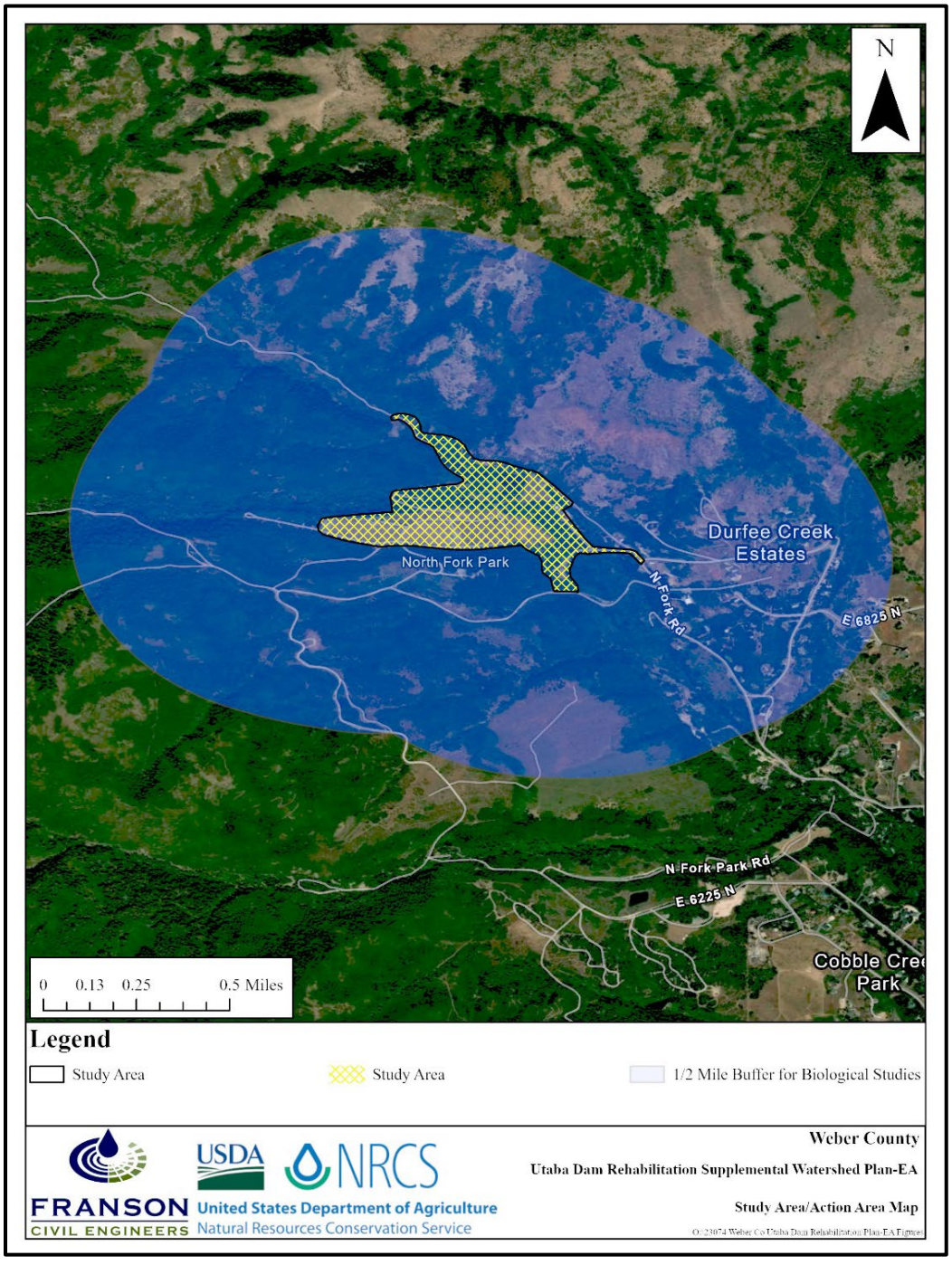

Figure 1-2: Study Area and Action Area Map

1.4.3 Area(s) of Potential Effects for NHPA Section 106 Compliance

Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, mandates that the potential effects of a proposed federal undertaking on historic properties be considered. In order to properly conduct section 106 analysis, the Area of Potential Effects must first be defined.

The Area of Potential Effects (APE) is defined 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. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking" (36 CFR, 800.16(d)).

The Direct and Indirect APE were determined in consultation with the Utah State Historic Preservation Office (SHPO), applicable THPOs/Tribes, Camp UTABA, and the U.S. Army Corps of Engineers (USACE)

Figure 1-3 shows the direct APE (61 acres) that was used to evaluate alternatives. The indirect/No Action APE (4,307 acres) will be the breach inundation zone map for the dam. The Direct APE includes the construction footprint, borrow areas, access roads and staging areas. The Indirect APE is the No Action Breach Inundation Zone/Benefitted Area.

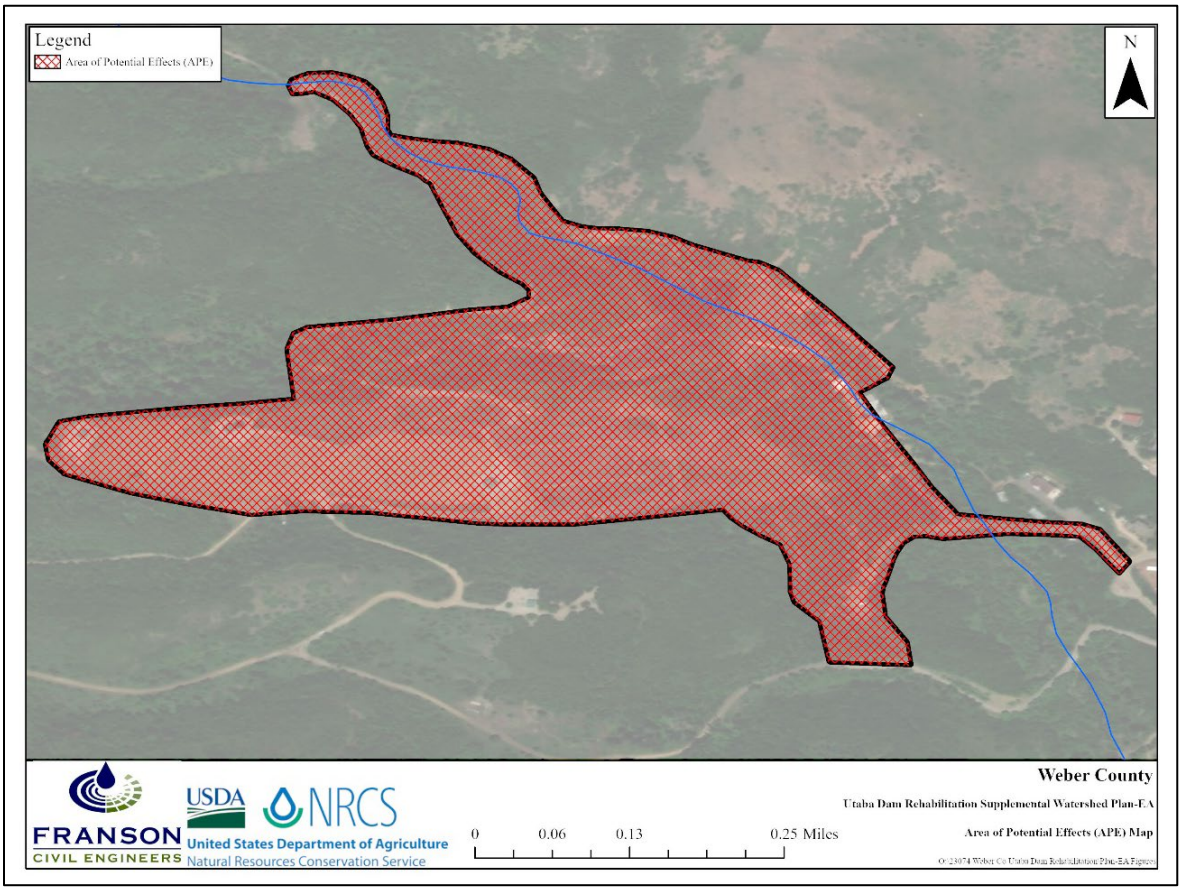

Figure 1-3: Direct Area of Potential Effects (APE) Map

1.5 Planning Process and Study Scope

In December 2020, Weber County requested assistance from NRCS through the watershed rehabilitation program to address deficiencies identified at Utaba Dam by previous studies. This plan presents the results of the watershed planning and the National Environmental Policy Act (NEPA) evaluation process and is anticipated to be followed by final design and construction of the Preferred Alternative.

This watershed plan has integrated multiple planning and analysis processes and has met their specific goals and requirements: 1) NRCS Planning process; 2) Principles, Requirements, and Guidelines (PR&G) for federal investments in water resources, and 3) environmental evaluation of alternatives and impacts under NEPA. Additional requirements have also been met by this plan including the National Historic Preservation Act (NHPA), Endangered Species Act (ESA), and Clean Water Act (CWA), among others. More details on these planning processes are included in the following section.

1.5.1 Stepwise Planning Process

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

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

The NRCS conservation planning process consists of nine steps, divided into three phases, which cover development, implementation, and evaluation of an Areawide Conservation Plan. The three phases and nine steps are identified below:

Phase 1 – Collection and Analysis

Step 1 – Identify Problems and Opportunities
Step 2 – Determine Objectives
Step 3 – Inventory Resources
Step 4 – Analyze Resource Data

Phase 2 – Decision Support

Step 5 – Formulate Alternatives
Step 6 – Evaluate Alternatives
Step 7 – Make Decisions

Phase 3 – Application and Evaluation

Step 8 – Implement the Plan
Step 9 – Monitor the Plan

This Supplemental Watershed Plan-EA also adheres to other stepwise planning processes such as those outlined in NEPA and the NHPA, which help to facilitate environmental and cultural resource compliance throughout the planning process.

The NEPA Process can be broken into three levels of analysis, each level being representative of the scope of the project. The levels are Categorical Exclusion, Environmental Assessment (EA), or Environmental Impact Statement (EIS). This project is progressing as an EA to determine whether it is appropriate to issue a Finding of No Significant Impact Statement (FONSI) or progress to an EIS, a Plan-EA requires the following sections:

- Purpose and Need for Action/External Scoping
- Affected Environment
- Alternatives
- Environmental Consequences
- Preferred Alternative

As stated in 36 CFR 800.1(a), The National Historic Preservation Act (NHPA) Section 106 process "requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Council a reasonable opportunity to comment on such undertakings. The procedures in this part define how Federal agencies meet these statutory responsibilities. The section 106 process seeks to accommodate historic preservation concerns with the needs of Federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties, commencing at the early stages of project planning. The goal of consultation is to identify historic properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize or mitigate any adverse effects on historic properties". The Advisory Council on Historic Preservation (ACHP) defines a 4-step process to comply with Section 106 of the NHPA:

Step 1- Determine Applicability

Determine Undertaking
Coordinate with Other Reviews (i.e., NEPA, PR&G, etc.)
Notify SHPO/THPO
Identify Tribes and other Consulting Parties
Plan to Involve the Public

Step 2 – Determine the APE and Identify Resources

Determine the Area of Potential Effects (APE)
Identify Historic Properties
Consult with SHPO/THPO, Tribes, and other Consulting Parties
Involve the Public

Step 3 – Determine Effects

Apply Criteria of Adverse Effects
Consult with SHPO/THPO, Tribes, and other Consulting Parties
Involve the Public

Step 4 – Resolve Adverse Effects

Avoid, Minimize, or Mitigate Adverse Effect
Notify the ACHP
Consult with SHPO/THPO, Tribes, and other Consulting Parties

Involve the Public

1.5.2 PR&G and the Ecosystem Services Framework

In addition to the planning processes listed in the previous subsection, this Plan-EA also complies with the Principles, Requirements, and Guidelines for Water and Land Related Resources Implementation Studies and Federal Water Resource Investments (PR&G) as outlined in the USDA DM 9500-013. The PR&G utilizes its own 8-step planning process that mirrors the processes in NEPA and of the NRCS 9-step process.

The PR&G 8-step watershed planning process is outlined below:

Step 1: Identify Problems and Opportunities
Step 2: Inventory Existing Resources and Conditions
Step 3: Forecast Future Conditions
Step 4: Develop a Wide Array of Alternatives
Step 5: Evaluate Effects of Individual Alternatives
Step 6: Compare Alternatives
Step 7: Identify Recommended Alternative
Step 8: Implement and Evaluate

An important part of the PR&G planning process is the use of an ecosystem services framework. This framework was developed to describe the benefits that people receive from nature and can be characterized as the goods and services provided by a healthy, functioning environment. Commonly, the ecosystem services framework is organized into four service categories including:

- Provisioning Services: Services that provide tangible goods for direct human use or consumption.
- Regulating Services: Services that maintain a world in which it is possible for people to live and provide critical benefits that buffer against environmental catastrophe or disaster either locally, regionally, or on a larger scale.
- Supporting Services: Services that support the underlying processes for maintaining conditions for life on Earth such as nutrient cycling, soil formation, and primary production (photosynthesis).
- Cultural Services: Services that make the World a place in which we want to live in such as recreational, spiritual, aesthetic viewsheds, Tribal, or other cultural and community values.

1.5.3 Ecosystem Services Evaluation Approach

Initially, NRCS and the SLO approached the ecosystem services framework qualitatively, seeking to identify the specific service types already present in the watershed during the scoping process and then to identify those that could interact with the dam and may have the potential to impact the benefits that would come from addressing the problem (i.e., structural deficiency). The public, Tribes, and other agencies were invited to identify and refine ecosystem services during scoping and at other points during the planning process.

During planning, it became clear that the total cost of implementation would likely exceed $10,000,000. Thus, an ecosystem services Level II analysis was conducted as described in the 2024 National Watershed Program Manual (NWPM) 501.30.F.

1.5.4 Period of Analysis

The period of analysis for this project is 52-years. This includes the 2-year implementation period and 50-year evaluation period (project life).

1.5.5 Project Scope

This Supplemental Plan-EA is being conducted via the Watershed Rehabilitation Program (REHAB), authorized by PL 83-566 section 14. This program seeks to perform all work necessary "to extend the service life of the structural measure and meet applicable safety and performance standards" (NWPM 505.30 (B)). Only dams that were originally constructed by one of the following four programs are eligible under the REHAB program:

- Pub. L. No. 83-566
- Pub. L. No. 78-534
- Pilot Watershed Program Authorized under the USDA Appropriation Act of 1954
- Resource Conservation and Development (RC&D) program authorized by the Agriculture and Food Act of 1981

A supplemental dam rehabilitation plan varies slightly from other watershed plans in that the analysis for rehabilitation is focused on extending the service life of the dam and to meet applicable safety/performance requirements (16 USC 18 section 1012). Thus, this Plan-EA will focus only on the required information for Utaba Dam per NWPM 505.35(A)(3). All PL 83-566 projects must provide at least 20% of benefits directly related to agriculture, including rural communities with populations less than 50,000 people. Additionally, under the program no single structure can provide more than 12,500 acre-feet of floodwater detention capacity and no more than 25,000 acre-feet of total capacity.

1.5.6 External Scoping

An external scoping process was completed to gather pertinent resource information and to initiate important planning, consultation, and coordination efforts. A project kickoff meeting was held on July 2, 2024. A 30-day scoping period was conducted from August 1 to August 30 to provide an opportunity for the public, SLO, agencies, Tribes, and other entities to express specific concerns related to the project. Four comments were received during the open comment period. These comments have been considered in the development of this Plan-EA. A scoping report was prepared summarizing the scoping process and is included in Appendix A.

During the 30-day comment period, both a virtual agency scoping meeting (August 14, 2024) and an in-person/virtual public scoping meeting (August 15, 2024) were held to present the overall project and Plan-EA process and to provide attendees with the opportunity to express specific concerns and their relevance to the Proposed Action.

NEPA scoping letters, dated July 30, 2025, were sent to Tribes/THPOs on August 1, 2024, to provide the Tribes/THPOs with the opportunity to comment during the public scoping period.

1.6 Related Projects and Studies

"In defining the scope of issues to be addressed in the watershed project plan, detail and attention must be focused on connected and cumulative actions associated with the Proposed Action" (NWPM 501.39(F)). No connected actions were identified during the preparation of this Plan.

2.0 Purpose and Need

2.1 Purpose

The purpose of the project is to address existing deficiencies at Utaba Dam and reduce the current breach risk and conform with all necessary safety standards.

2.1.1 Federal Objective

Water resources investments shall reflect national priorities, encourage economic development, and protect the environment by:

(ii) seeking to maximize sustainable economic development.

(iii) seeking to avoid the unwise use of floodplains and flood-prone areas and minimizing adverse impacts and vulnerabilities in any case in which a floodplain or flood-prone area must be used; and

(iv) protecting and restoring the functions of natural systems and mitigating any unavoidable damage to natural systems.

2.1.2 Project Objectives

The project objectives are to solve the problems identified in section 2.2.1by using the opportunities described in section 2.2.2. Objectives for this project include (it is assumed that construction will be completed in 2027 and that improvements are designed for a lifespan of 50 years):

- **Objective 1:** Rectify dam safety compliance problems with the Utaba Dam through 2077.
- **Objective 2:** Rectify seismic stability concerns associated with Utaba Dam through 2077.
- **Objective 3:** Mitigate recognized flood hazards associated with a dam breach for critical infrastructure downstream of Utaba Dam through the year 2077.
- **Objective 4:** Minimize sedimentation accumulation in the Utaba Dam and increase routing capacity through the year 2077.
- **Objective 5:** Mitigate the need to maintain a floodwater retarding structure in the watershed to reduce peak flow of flood events and to prevent the blockage of downstream infrastructure by removing debris through the year 2077.

2.1.3 Constraints and Considerations

In any planning process, there are certain restrictions that limit the extent to which the implementation of a project will achieve the project objectives. The constraints and considerations for the Utaba Dam Rehabilitation project include:

- **Constraint 1:** Avoid impacts to Utaba Dam that would directly adversely impact or degrade potential habitat for the federally-threatened Western Yellow-billed Cuckoo or Ute Ladies'-tresses.
- **Constraint 2:** Avoid impacts to any cultural and/or historic resources other than Utaba Dam itself.
- **Constraint 3:** Avoid Real Property Acquisition challenges for properties in the project area.
- **Constraint 4:** Avoid adverse impacts to Camp UTABA and the Durfee Creek HOA, two significant cultural and residential properties in the project area.

- **Constraint 5:** Avoid negative impacts to recreational facilities in the project area where possible, such as Camp UTABA & North Fork Park.
- **Constraint 6:** Avoid exceeding the funding limits for the project, which have been established by Public Law 83-566 through an agreement between the SLO and the NRCS.

2.2 Need

The need for the project is to reduce the risk to life and property, eliminate structural vulnerabilities, and extend the service life of the dam and to allow it to continue to provide protection from floods by removing structural deficiencies at Utaba Dam.

2.2.1 Problems

PR&G requires the identification of a problem, or problems, to be addressed by the Watershed Plan. For this Plan, the problem is that Utaba Dam does not meet current Utah State Dam Safety and NRCS High Hazard Dam Safety criteria; specifically, there is noncompliance with state and NRCS design criteria for the auxiliary spillway capacity. The underlying stressors that have caused these problems include:

- **Stressor 1:** aging condition of Utaba Dam (originally built in 1962)
- **Stressor 2:** acidic soil conditions in the watershed that can degrade concrete structures such as the auxiliary spillway
- **Stressor 3:** accumulation of sediment in Utaba Dam since its construction in 1962
- **Stressor 4:** location of Utaba Dam near faults
- **Stressor 5:** continued development of the communities downstream of Utaba Dam

The stressors in the project area have been created by large-scale drivers:

- **Driver 1:** erosional processes during high runoff
- **Driver 2:** Increased precipitation as rain, increased drought/wildfire risk
- **Driver 3:** continued human-use of water resources and need for water resources
- **Driver 4:** passage of time/general wear-and-tear on infrastructure

2.2.2 Opportunities

The following opportunities presented by the project will serve as a means of resolving immediate problems (stressors) and promoting positive, long-term stability, and change in large-scale issues (drivers) affecting the project area:

- **Opportunity 1:** Improve the safety of the general public.
- **Opportunity 2:** Enhance community resilience to flooding risks through the best fit of project measures.
- **Opportunity 3:** Increase the level of breach and flood risk awareness in the community.
- **Opportunity 4:** Create a new fire suppression resource in the watershed.
- **Opportunity 5:** Reduce the peak flows downstream of the dam resulting from a potential flood event.
- **Opportunity 6:** Remove sediment and debris that would cause blockage of bridges and culverts during a flood event, while allowing fine grained sediment conveyance beyond the structure to occur during normal operating conditions. The fine-grained sediments do not cause blockages of bridges or culverts, but they do accumulate over time in the reservoir decreasing its effectiveness.

3.0 Affected Environment: Current & Future Conditions

The Affected Environment: Current and Future Conditions section provides an evaluation of baseline conditions (i.e., current conditions). In PR&G terms, this section describes the current ecosystem service flows within the system (physical, biological, ecological, economic, and social services in the watershed). Additionally, the reasonably foreseeable future conditions of the ecosystem services are also evaluated using the best available science for resources in the watershed. It is in this chapter that the context for alternative formulation is established (see chapter 4) and for the determination of tradeoffs among ecosystem services and impacts to the environment (see chapter 5) that will lead to the selection of a Preferred Alternative (see chapter 6). The NRCS 9-step planning process steps 3 and 4, PR&G planning steps 2 and 3, and items 2 and 3 under the generalized NEPA process are covered by this chapter.

3.1 Resource Categories of Concern

During the external scoping process, relevant resources or environmental concerns were identified to be analyzed in detail and to identify which resources should be eliminated from detailed study. Resource concerns were identified for the project based on required scoping concerns in the NWPM and from additional concerns identified by the SLO, public, stakeholders, Tribes, or agencies during scoping meetings or the 30-day public comment period. The table below identifies the resource categories of concern and their relevance to this supplemental Plan-EA. Additionally, the table identifies the ecosystem services established during scoping.

Table 3-1: Resource Categories of Concern and Ecosystem Services Identified During Scoping

ITEM/CONCERN	RELEVANT TO THE PROPOSED ACTION (YES/NO)	RATIONALE
Soil-Related Concerns		
Soil Resources	YES	Soil conditions should be evaluated at the site.
Prime and Unique Farmland, and Farmland of Statewide or Local Importance	NO	Although the NRCS WebSoil Survey designates the area next to the dam as “farmland of statewide importance”, the land is used for Camp UTABA and not for agricultural purposes. There is no other farmland in the area.
Geology	YES	Geology is a critical factor in determining structural stability.
Water-Related Concerns		
Water Resources	YES	Utaba is a dam that exists to take the peaks off of high flows in the North Fork of the Ogden River and Cutler Creek.

ITEM/CONCERN	RELEVANT TO THE PROPOSED ACTION (YES/NO)	RATIONALE
Sole Source Aquifers (SSA)	NO	There are no sole source aquifers in the project area (EPA).
Water Quality	YES	Surface water and groundwater quality may be affected by the Proposed Action.
Floodplain Management	YES	The reservoir and Camp UTABA exist within a Zone A FEMA Floodplain (National Flood Hazard Layer).
Coastal Zone Management Area	NO	The project is not located near a coastal area.
Waters of the U.S. (WOTUS), Wetlands, and Special Aquatic Sites	YES	There may be jurisdictional wetlands and/or WOTUS in the project area (National Wetlands Inventory).
Coral Reefs	NO	There are no coral reefs in the project area.
Regional Water Resource Plans	NO	The project is not tied to any regional water resource plans.
Wild and Scenic Rivers	NO	There are no designated wild and scenic rivers in the project area (National Park Service).
Air-Related Concerns		
Air Quality	YES	Temporary construction activities would likely produce dust and emissions, impacting air quality.
Plant and Animal-Related Concerns		
Threatened and Endangered (T&E) Species	YES	USFWS IPaC shows five T&E species that may occur within the project area. There is some suitable habitat for the Western Yellow-billed Cuckoo in the project area (USFWS). There is also suitable habitat for the threatened Ute Ladies'-tresses, although these areas are more than 300-feet from the nearest are where ground disturbance would occur outside of the actual disturbance area.
Migratory Birds	YES	Migratory birds are likely to occur in the watershed; the IPaC system identified 12 species that may occur in the project area (USFWS).
Bald and Golden Eagles	YES	Bald Eagles may occur within the watershed.
Essential Fish Habitat	NO	There is no essential fish habitat in the project area.

ITEM/CONCERN	RELEVANT TO THE PROPOSED ACTION (YES/NO)	RATIONALE
Ecologically Critical Areas	NO	There are no ecologically critical areas in the project area.
Invasive Species	YES	Invasive plant species are known to occur in the project area.
Fish and Wildlife	YES	Fish and wildlife habitat exists in the project area. There is potential for minor impact to species due to construction.
Natural Areas	YES	There are no protected natural areas in the project area. However, there is natural land surrounding the project area.
Riparian Areas	YES	Riparian areas likely occur within the project area.
Forest Resources	NO	There are no forest resources in the project area.
Human Use-Related Concerns		
Cultural and Historic Resources	YES	Project activities have the potential to affect cultural and historic resources.
Social Issues	NO	There are no significant social issues that would be impacted by the Proposed Action.
Socioeconomics (Local, Regional, and National Economy)	YES	The local economy would be affected by the Proposed Action. This concern is addressed under the heading “socioeconomics”
Public Health and Safety	YES	There may be improvements to public health and/or safety under the Proposed Action.
Scenic Beauty	YES	The scenic beauty of the project area will be evaluated including the designation of the North Fork Park as a dark sky park.
Parklands (including National Parks, Monuments, and Historical Sites)	YES	North Fork Park is an existing parkland in the area and is designated as an international dark sky park (IDSP).
Significant Scientific Resources	NO	There are no significant scientific resources (studies) in the project area, including paleontological resources.

ITEM/CONCERN	RELEVANT TO THE PROPOSED ACTION (YES/NO)	RATIONALE
Land Use	NO	Land use designations will not change under the Proposed Action.
Scoped Ecosystem Services of Concern		
Provisioning Services	YES	There are provisioning services in the project area including drinking water, irrigation water, harvested crops, and fish for sustenance.
Regulating Services	YES	There are regulating services in the project area including flood risk regulation, public safety and damage mitigation, and fire suppression (wildfire risk buffering).
Supporting Services	NO	Supporting Services are categorized as an intermediate ecosystem service. As an intermediate service, their service is already included in the final ecosystem service, which mainly consists of benefits derived from Provisioning, Regulating, and Cultural Services. Because there is no measurable benefit associated with Supporting Services, it is not included in the ecosystem services analysis.
Cultural Services	YES	There are cultural services in the project area (Camp UTABA, and other downstream church/youth camps).
Other Concerns Identified by SLO, Agencies, and the Public		
Operation, Maintenance, and Replacement of the Dam	YES	OM&R of the dam will be impacted by the Proposed Action.
Dam Sedimentation Rates (Originally Planned, Actual, and Future)	YES	Sedimentation is an important concern to address for the Proposed Action.
Breach Analysis (assumed parameters)	YES	A breach analysis will be conducted for the dam.
Hazard Classification (NRCS and State)	YES	Hazard classification will be evaluated.
Potential Modes of Dam Failure (Stability, Hydrologic, Seismic,	YES	Modes of dam failure will be evaluated in detail.

ITEM/CONCERN	RELEVANT TO THE PROPOSED ACTION (YES/NO)	RATIONALE
Seepage, Material Deterioration, etc.)		
Consequences of Dam Failure	YES	The consequences of dam failure will be discussed.
Reasons the Structure Fails to Meet NRCS and State Safety and Performance Standards	YES	The reasons the dam fails to meet performance standards will be evaluated.

3.2 Inventory of Existing Resources

The inventory of existing resources provides the environmental baseline in NEPA terms and describes the overall physical, biological, social, and economic conditions of the watershed in PR&G terms. To the extent possible, reasonably foreseeable future conditions are also projected for each evaluated resource concern identified in section 3.1. All resources identified during the external scoping process are presented in the following subsections. The resources have been presented at a level of detail commensurate with the available data pertaining to that resource within the watershed. Figures, tables, and maps have been included where applicable to provide additional information on certain resource concerns.

3.2.1 Geology

Geology relates to the underlying lithology of the project area. This is usually in reference to geologic materials (usually rock) that lie beneath the mapped soils which are typically derived from that regolith. NRCS sets the lower boundary of soil information available in the NRCS WebSoil Survey (WSS) at ~6.5 feet. The underlying lithology of the project area is mostly comprised of Pleistocene and Holocene alluvial deposits. Figure 3-1 below was generated using a 2016 GIS data download for the Ogden Quadrangle from the Utah Geological Survey (UGS). The following geologic units comprise the majority of the project area (descriptions from 2016 UGS survey).

- **Pleistocene Alluvial Deposits (Qab, Qafo, & Qap):** Variably sorted sand, silt, clay, and gravel; unconsolidated to weakly consolidated; appears to be related to Bonneville shoreline of Lake Bonneville.
- **Holocene Alluvial Deposits (Qal):** Moderately sorted, unconsolidated sand, silt, clay, and gravel; locally includes muddy, organic overbank and oxbow lake deposits
- **Inkom Formation (Zi):** Gray to reddish-gray weathering, poorly resistant, dark-green, fine-grained meta-sandstone and olive gray to lighter green-gray, laminated argillite, with meta-tuff lenses; lower micaceous and meta-tuff part missing in southern outcrops
- **Mutual Formation (Zm):** Grayish-red to purplish-gray, medium to thick-bedded quartzite with local feldspathic quartzite with pebble conglomerate lenses; commonly cross-bedded and locally feldspathic; contains locally mappable argillite beds

The dam itself rests on a silty gravel foundation with a cutoff through the silty grave foundation and excavated into bedrock through the foundation and along the left abutment (Gerhart Cole, Inc., 2025).

The Gerhart Cole, Inc. geotechnical investigation performed between July 8 and November 2, 2024, included geologic mapping, seismic refraction lines, drilling test holes, and excavating test pits to identify geologic and seismic conditions at the site, assist with bedrock profiling, and to provide insight on the groundwater levels around the dam if saturated conditions exist. A full description of the investigation, its findings, and its methodology may be found in the technical memoranda in Appendix E.

The Utah Geospatial Resource Center (UGRC) was able to provide a shapefile of the approximate location of all Quaternary age faults in Utah. When overlaid with the project area, it can be seen that the Ogden Valley North Fork Fault runs through the southwestern side of the project boundary (up the Cutler Creek drainage). According to data compiled in 2016 by the Utah Geological Survey (UGS), the fault has a slip rate of less than 0.2 mm/year and is approximately 16 miles in length. It should be noted that, according to the same data, the reliability of the fault's location as depicted in the Figure 3-1 is poor.

The geotechnical field investigation performed by Gerhart Cole, Inc. in 2024 identified seismic activity as a hazard in the area. The site is located at the periphery of the north-south trending zone known as the Intermountain Seismic Belt (ISB) (Gerhart Cole, Inc., 2025). However, no mapped faults are located within the reservoir and embankment dam footprint (Gerhart Cole, Inc., 2025). Other faults in the vicinity and a full seismic and geologic analysis may be found in the geotechnical and seismic technical memoranda prepared by Gerhart Cole, Inc., located in Appendix E.

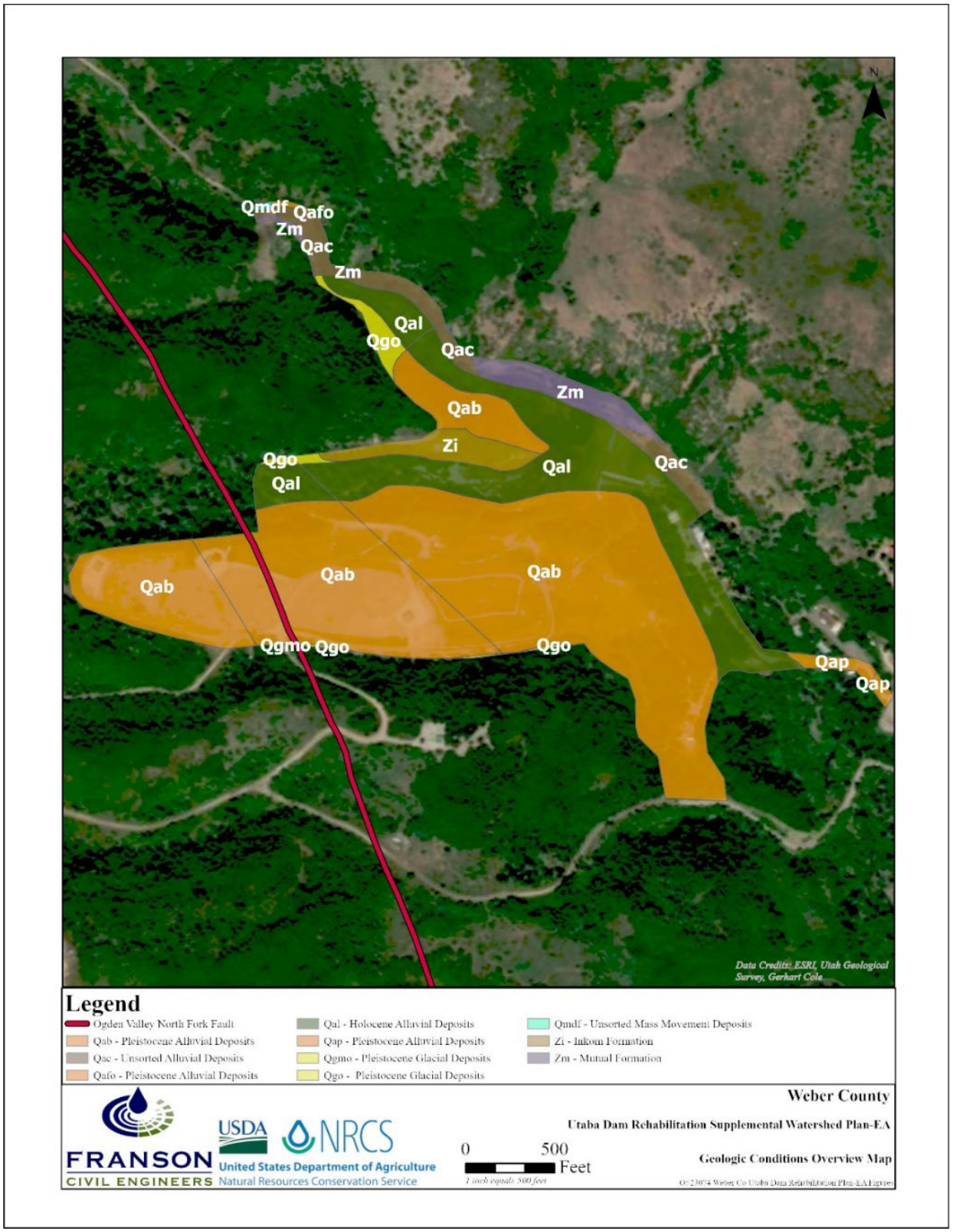

Figure 3-1: Geologic Conditions Overview Map

3.2.2 Soil Resources

Soils in the project area were inventoried using NRCS WebSoil Survey (WSS), which was accessed on August 21, 2024. A custom soil resource report for the Area of Interest (AOI) was generated on that date and is included in Appendix E to this Plan-EA. Nearly 80% of the AOI is comprised of two soil units: the Trojan Loam (TnD) and the Poleline Stony Loam (PoG).

The Trojan Loam is a gravelly clay loam that is typically derived from mixed-source alluvial material. This soil typically occurs in linear to concave landscape positions and has a slope range of 8% to 15%. It is a typically well drained soil with a moderately high saturated hydraulic conductivity (Ksat) of 0.20 to 0.60 in/hr. This material mainly comprises the planned borrow area.

The Poleline Stony Loam is a gravelly silt loam that is typically derived from mixed-source colluvium. This soil typically occurs in convex mountainflank positions and has a slope range of 40% to 70%. It is a typically well drained soil with a low saturated hydraulic conductivity of 0.01 to 0.06 in/hr. This soil lines the steep slopes of the dam embankment and the sides of the reservoir. All soil units within the AOI are summarized in the table below along with their average saturated hydraulic conductivity.

Table 3-2: Soil Characteristics in AOI (NRCS WSS)

Description	Classification	Mean Ksat (inches/hour)	Acres in AOI	% of AOI
TnD	Trojan Loam, warm, 8% to 15% slopes	0.40	27.2	44.2%
PoG	Poleline Stony Loam, 40% to 70% slopes	0.04	21.9	35.6%
W	Water	NA	4.8	7.7%
CW	Cumulic Haploborolls	10.02	3.1	5.1%
PdG	Patio Gravelly Loam, 40% to 60% slopes	0.31	1.5	2.5%
SfG	Smarts Loam, 40% to 60% slopes	0.40	1.2	1.9%
DeG	Durfee Stony Loam, 30% to 70% slopes	0.13	0.9	1.4%
LaD	Lamondi Stony Loam, 3% to 15% slopes	1.30	0.7	1.1%
YdG	Yeates Hollow-Smarts Complex, 30% to 70% slopes	0.10	0.2	0.3%
TOTAL FOR AREA OF INTEREST (AOI)			**61.5**	**100.0%**

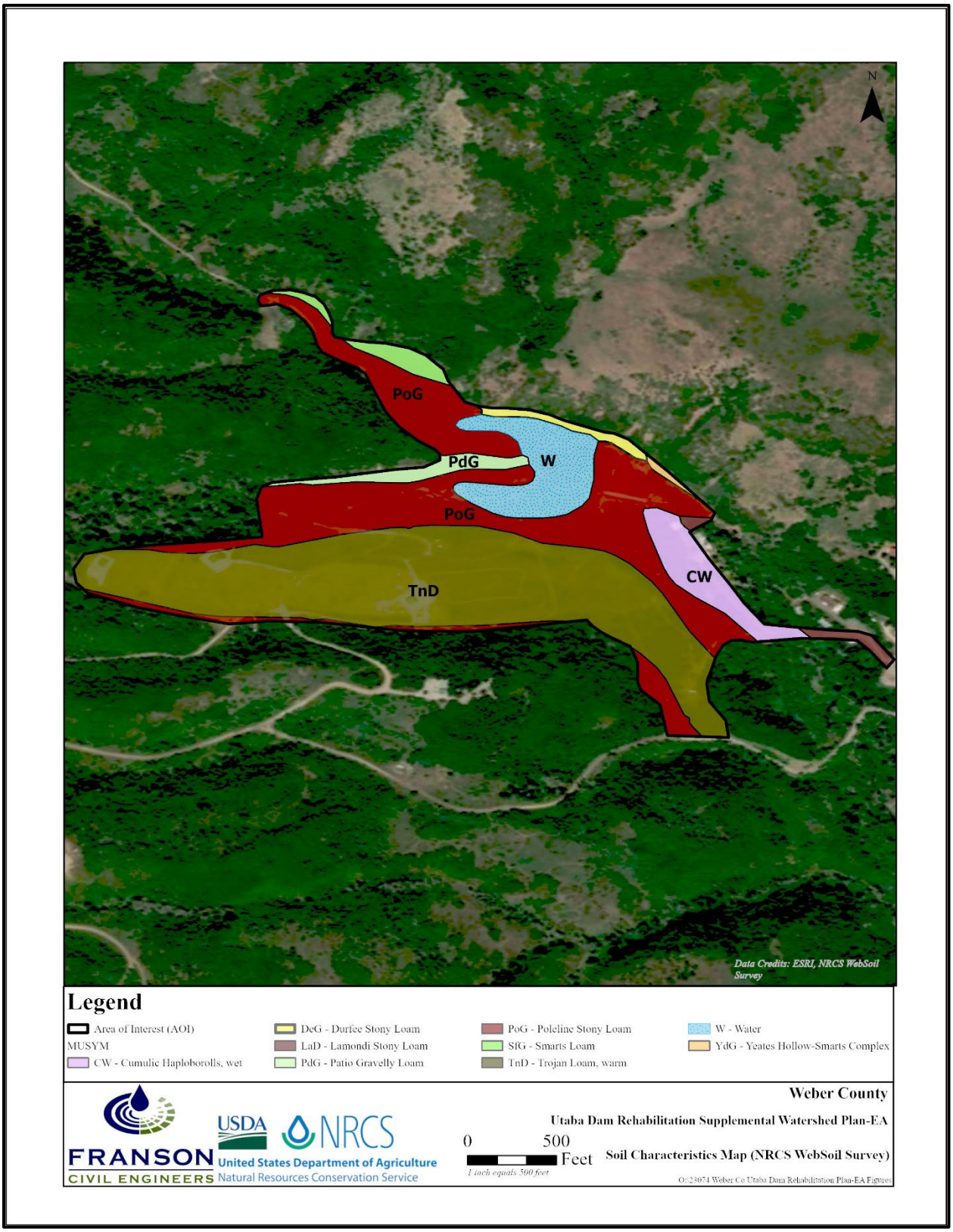

Figure 3-2: Soil Characteristics Map (NRCS WSS)

Hydric soils form in areas where the soil is saturated/inundated with water for enough of the year to develop anaerobic conditions in the upper horizons of the soil profile. Hydric soils are well known as being indicators of potential aquatic resource sites such as wetlands or riparian areas. Because of this, a map displaying hydric soils in the project area is shown in Figure 3-3 below. As can be seen, only the Cumulic Hapoloborolls located in the southwestern portion of the AOI are designated as hydric by NRCS WSS. It is designated as a semi-wet fresh streambank (narrowleaf cottonwood) ecological site with a flooding frequency rating of "frequent." This soil classification is almost entirely located downstream of the embankment in the Camp UTABA property.

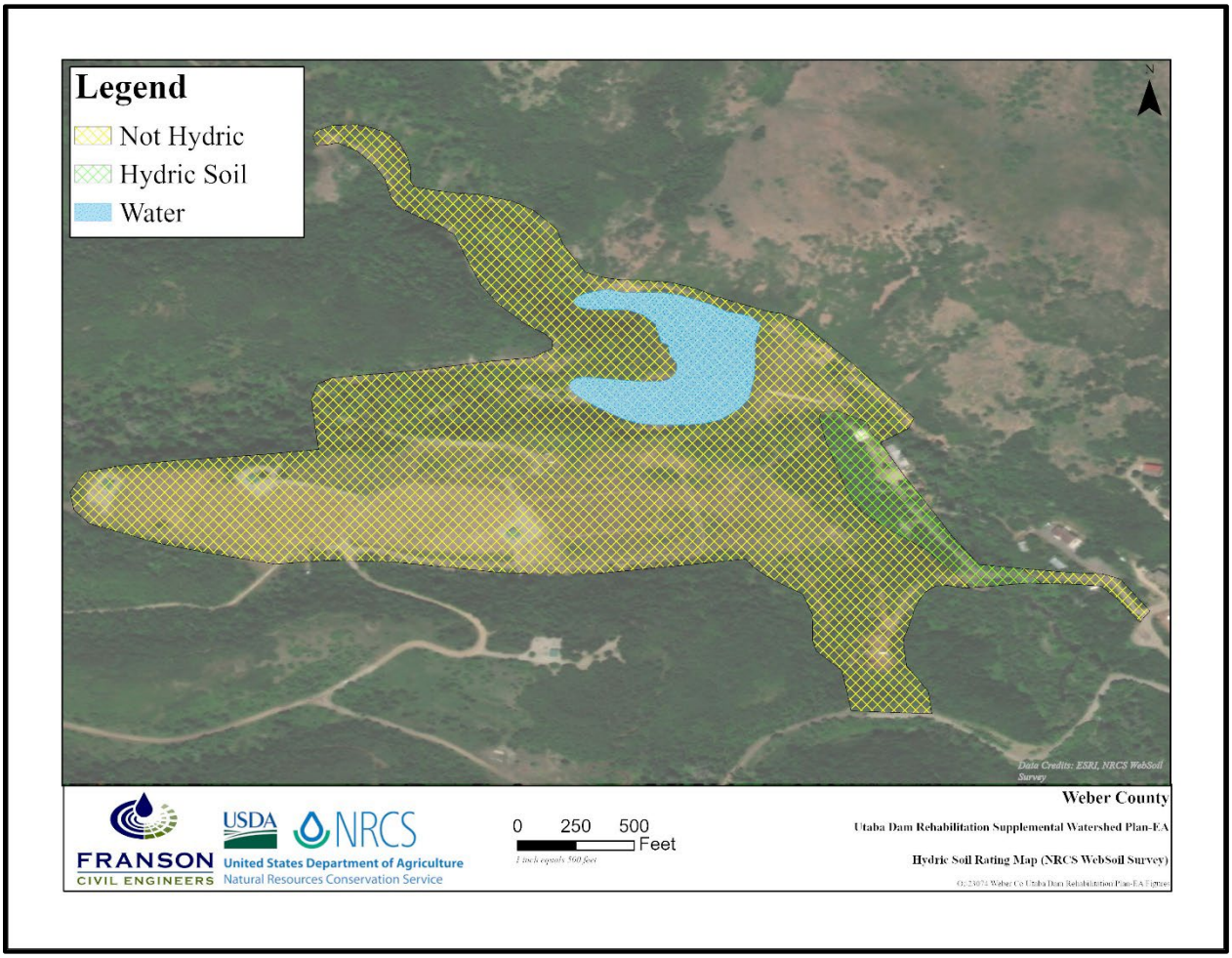

Figure 3-3: Hydric Soil Rating Map (NRCS WSS)

Erosion is a function of soil types, the cohesive nature of the soils, slopes, vegetative cover, and management practices. The NRCS has classified the erosion hazards of specific soils by using the soil erodibility factor "K." The soil erodibility K factors range from 0.10 to 0.32. The higher the value of the "K" factor, the more erodible the soil is. Table 3-3 below summarizes the "K" factors as they relate to the soil classifications in the project area. Based on the values in the table, the soils in the AOI are not highly erosive when vegetated unless they exist on steep slopes.

Table 3-3: Soil Erodibility Summary (NRCS WSS)

Classification	Soil Erodibility Factor "K"	Acres in AOI	% of AOI
TnD	0.32	27.2	44.2%
PoG	0.15	21.9	35.6%
W	NA	4.8	7.7%
CW	Unavailable	3.1	5.1%
PdG	0.10	1.5	2.5%
SfG	0.28	1.2	1.9%
DeG	0.10	0.9	1.4%
LaD	0.15	0.7	1.1%
YdG	0.10	0.2	0.3%
TOTAL FOR AREA OF INTEREST AOI		**61.5**	**100.0%**

Soil health is reflected by three important characteristics including:

- The ability to infiltrate and store water
- The ability to filter, buffer, degrade, immobilize, and detoxify organic and inorganic pollutants
- The ability to cycle nutrients including carbon, nitrogen, phosphorus, and many others that are stored and transformed

In most of the project area, soil conditions are being fully met. It should be noted that most of the soils in the AOI, particularly those along the dam embankment, are slightly acidic with a 1-to-1 water pH rating between 6.1 and 6.7. Acidic soil conditions may contribute to the degradation of the concrete of the auxiliary spillway. Acidic soils in the watershed result in acidic water conditions in the saturated parts of the soil. Acidic water alters and weakens concrete.

3.2.3 Sedimentation Rates (Originally Planned, Actual, and Future)

The majority of the land upstream of Utaba Reservoir is owned by the US Forest Service (USFS). Some areas exist as private holdings on USFS land as well (UGRC, 2024). It should be noted that future sedimentation rates in the reservoir are not expected to exceed the historical rates as there are no major changes anticipated in the future characteristics of the watershed. Although, climatic changes and current trends could indicate higher frequency and intensity storm events, which could increase sedimentation rates. The total planned sediment storage volume when the reservoir was designed was 90 acre-feet. The field inspection referenced in the 2020 dam assessment report found the total existing sediment volume in the reservoir to be approximately 33 acre-feet. Between the dam's construction in 1962 and 2020 (58 years), it was calculated that the average annual sediment accumulation rate for the dam was approximately 0.57 acre-foot per year. This value was calculated by dividing the 33 acre-feet of accumulated sediment by 58 years. The dam

has an additional 57 acre-feet of available sediment storage meaning the existing reservoir could store sediment for another 100 years at the average sedimentation rate However, other deficiencies limit the lifespan of the structure, meaning that, even though the dam may have sediment storage capacity, it cannot continue to store sediment for 100-years under current conditions because other factors would likely cause failure in less than 100 years. Table 3-4 summarizes the reservoir sedimentation rates.

Table 3-4: Utaba Reservoir Sedimentation Rates (Planned, Actual, Future)

Planned Rate	Actual Rate	Future Rate
Unknown	0.57 acre-feet/year	0.57 acre-feet/year

3.2.4 Surface Water Quality & Flow Characteristics

Utaba Reservoir is fed by two water sources: the North Fork of the Ogden River and Cutler Creek. The Clean Water Act (CWA), as amended (1972), establishes the basic structure for regulating quality standards for surface waters. Surface waters of the State of Utah, namely, rivers or streams, lakes, reservoirs, creeks, and canals are classified according to their designated beneficial uses to protect against controllable pollution.

The Environmental Protection Agency (EPA) is charged with regulating the implementation of the CWA and has delegated a certain portion of its authority to the U.S. Army Corps of Engineers (USACE) and the Utah Department of Environmental Quality (UDEQ), which includes the Utah Division of Water Quality (UDWQ) and the Utah Division of Drinking Water (UDDW). UDWQ is responsible for classifying each water body through Utah Administrative Code (UAC) R317-2-13 as unimpaired or impaired, which designation requires further analysis to determine pollutants and remedial actions, if necessary.

Under rules generated by the State of Utah, beneficial uses are classified into the following categories:

- Primary recreational contact
- Secondary or infrequent recreational contact
- Protection for cold water species
- Protection for warm water species
- Protection for waterfowl, shore birds, and other wildlife
- Protection for agriculture and stock watering
- Protection for public drinking water sources

The beneficial uses for the North Fork of the Ogden River and Cutler Creek are classified as follows:

- **Class 1C** – Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water.
- **Class 2B** – Protected for infrequent primary contact recreation. Also, protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.

- **Class 3A** – Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.
- **Class 4** – Protected for agricultural uses including irrigation of crops and stock watering.

According to UDWQ, the North Fork Ogden River and its tributaries from Pineview Reservoir to headwaters (i.e., Cutler Creek) are listed as impaired for Class 3A. This is due to the low dissolved oxygen (DO) levels.

Total Maximum Daily Loads (TMDLs) have been established by Utah for Pineview Reservoir and its tributaries, including the North Fork Ogden River and its tributary, Cutler Creek (UDWQ, 2002), because the water quality does not meet the required beneficial uses. The primary parameter of concern (the only impaired use for N. Fork Ogden River) is DO.

DO is the oxygen in the water that fish and other aquatic organisms use to live. Because of the way that fish diffuse oxygen through their gills, the transfer of oxygen to organisms can only be efficient above certain DO concentrations. This means that even though oxygen may be present in a water source, it may exist at too low a concentration to sustain much aquatic life.

A fully supporting DO concentration status for a waterbody is assigned by UDWQ to waters with a concentration above 4.0 mg/L for greater than 50% of the water column depth; when 25% to 50% of the water column is above 4.0 mg/L, the waterbody gets a partially supporting status, and when less than 25% of the water column exceeds 4.0 mg/L it receives a not supporting status. According to the survey outlined in the Pineview Reservoir TMDL, the reservoir (fed in part by N. Fork Ogden River) has a DO concentration status of Not Supporting (UDWQ, 2002).

Furthermore, monitoring of Pineview Reservoir performed by the UDWQ in 2024 identified blooms of cyanobacteria (blue-green algae) in the reservoir. These blooms are also known as Harmful Algae Blooms (HABs). The most recent update on the HABs, published in October 2024, advised residents not to swim, drink, or water ski in areas where algae blooms exist and recommended thorough cleaning of any fish caught in the reservoir. HABs are often caused by high levels of phosphorus and/or shallow, warm, and slow-moving water conditions. For this reason, they are more common in late summer and early fall (UDWQ, 2024). Although the impairment caused by phosphorus and algal blooms are not identified as class impairments directly in the TMDL like low dissolved oxygen, they are identified as issues and causes of impairment (UDWQ, 2002).

3.2.5 Groundwater

According to the Utaba Retarding Dam Final Dam Assessment (2020), there is a steady seepage issue located at the downstream slope of the dam associated with a high groundwater condition. The report hypothesized that seepage through the thinly bedded and fractured argillite foundation rock could be a factor contributing to this high groundwater condition downstream from the toe. It is unknown if the source of the groundwater is from the reservoir flowing through the argillite or if it is an artesian condition.

During the geotechnical investigation, groundwater was observed at the time of drilling four wells (see Geotechnical Report in Appendix E). Either way, this condition could adversely affect the stability of the dam embankment.

In order to establish a more general analytic baseline for estimating the effects of the proposed alternatives on the resource concern of groundwater, it is important to understand that the area

surrounding Pineview Reservoir has a relatively shallow groundwater aquifer (UDWQ, 2002). More generally, the groundwater in the Ogden Valley occurs in perched, confined (artesian), and unconfined (water table) aquifers in the valley fill to depths of 600 feet (UDWQ).

Figure 3-4 was generated from data available on NRCS WSS showing the approximate depth to the water table below each soil unit within the project area. As shown in the figure, the majority of the project area is over 200 cm to the water table with one soil unit having a depth of 30 cm. This is the area identified as having shallow groundwater and seepage issues in the 2020 Dam Assessment Report. It also follows the N. Fork Ogden River as it leaves the reservoir. It is not necessarily unusual for streams to be gaining as they leave a reservoir.

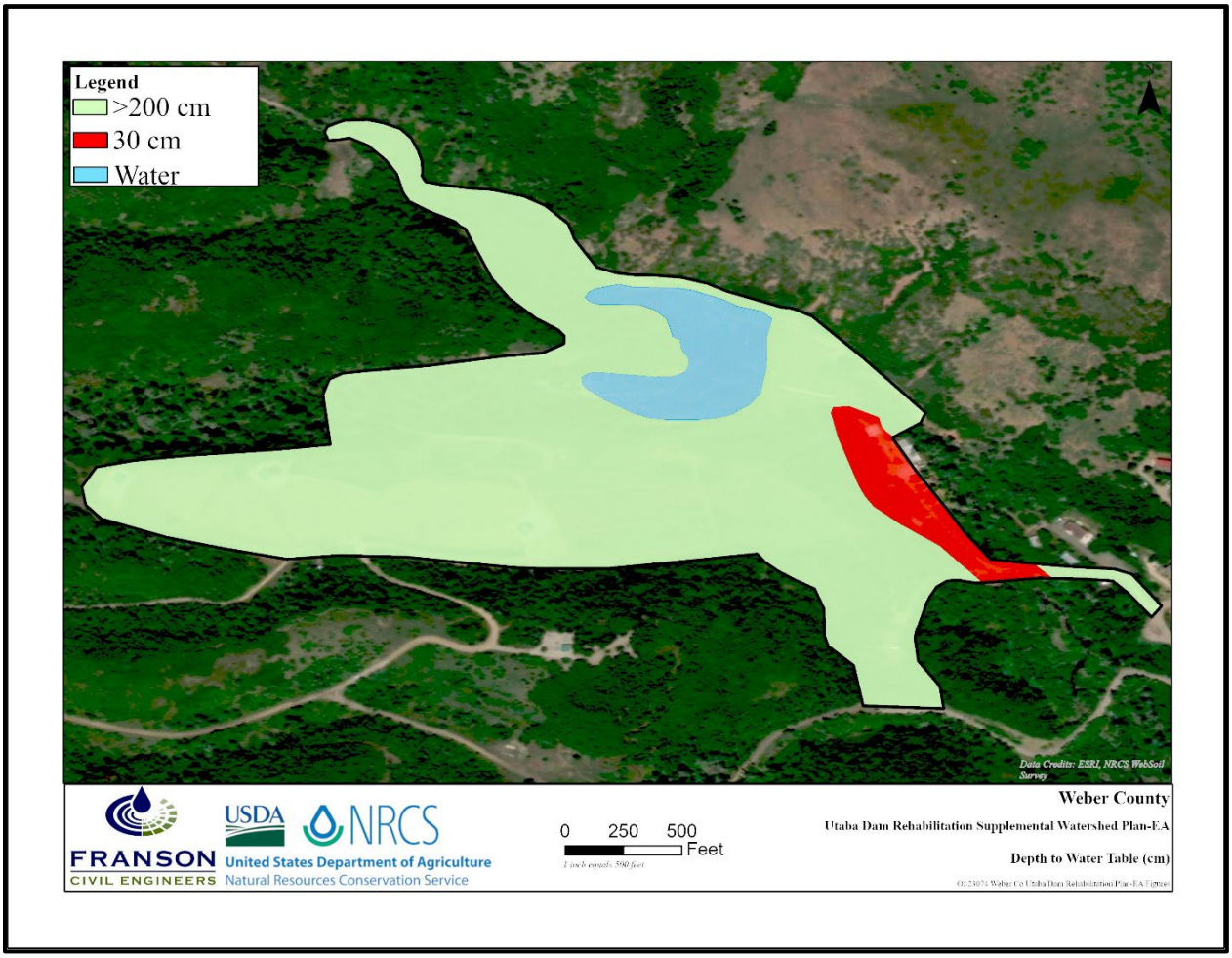

Figure 3-4: Depth to Water Table

3.2.6 Floodplain Management

Floodplain management refers to the management of areas that have a 1% or greater chance of flooding in any given year. Another name for these is the 100-year floodplain. The 500-year floodplain is made up of areas that are subject to a 0.2% or greater chance of flooding in a given year. Flood hazard areas and potential flood severity that may occur are categorized by the Federal Emergency Management Agency (FEMA). These categorizations are depicted on a community's Flood Insurance Rate Map (FIRM). Special flood hazard areas (Zone A on a FIRM) are another name for the 100-year floodplain.

Floodplain management for watershed projects is conducted in accordance with Executive Order 11988 (Floodplain Management), which directs federal agencies to reduce the risk of flood loss and minimize impacts associated with occupancy and modification of floodplains. While watershed projects are intended to reduce flood risk, residual risk from extreme flood events may remain.

FIRMs were reviewed to determine if the project area lies within an area of potential risk. The FIRM for the study area was obtained using FEMA's National Flood Hazard Layer (NFHL) database. The FIRM map number for the study area is 49057C0018F, and the panel number is 0018F. Figure 3-5 below shows the areas within and near the study area identified as being within Zone A (special flood hazard areas subject to inundation by the 1% annual chance flood). Inundation maps depicting the spatial extent of flooding for the 100-year and 500-year events under both without-project and with-project conditions are provided in Appendix C of this Plan-EA.

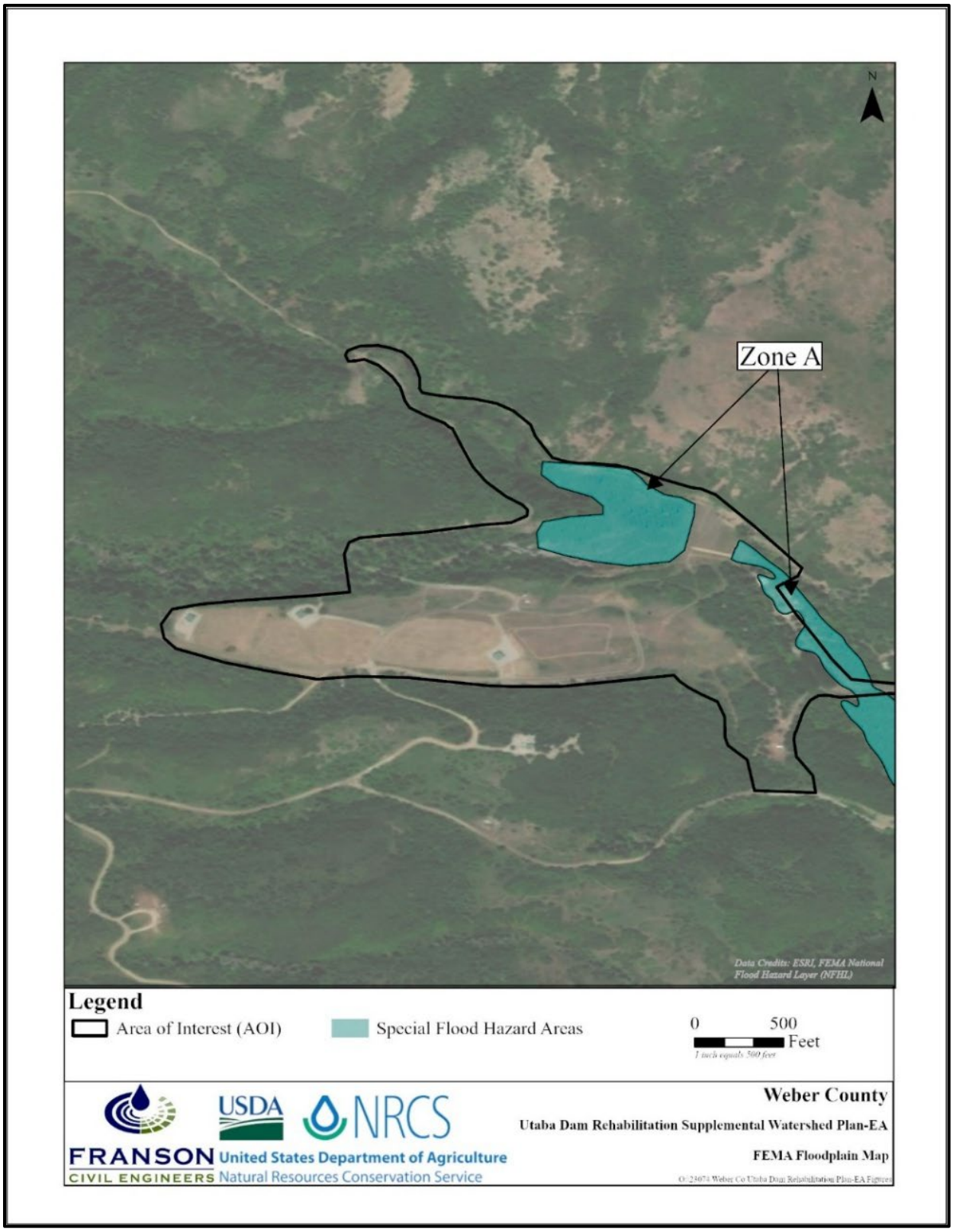

Figure 3-5: FEMA Floodplain Map

3.2.7 Wetlands and Waters of the United States (WOTUS)

Wetlands play an important role in the ecology of a watershed. They provide water storage, water filtration, nutrient and chemical absorption, and flood attenuation among other benefits. They also provide habitat for various birds, fish, reptiles, amphibians, and botanical species. The USACE administers and enforces Section 404 of the CWA, which defines wetlands as "those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." The National Wetlands Inventory (NWI), administered by the U.S. Fish and Wildlife Service (USFWS) Mapper was accessed to identify potential wetlands within the project area, but identified only riverine areas, which did not appear to be in alignment with aerial imagery.

A study area was defined to perform an aquatic resource assessment and preliminary jurisdictional determination. This inventory of aquatic resources was completed by Cirrus Ecological Solutions in 2024. The inventory did not include a formal jurisdictional wetland delineation, meaning the use of all three U.S. Army Corps of Engineers (USACE) wetland criteria were not utilized (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology). However, to generate a conservative depiction of the aquatic resources in the area, the mapping effort considered aerial imagery and the presence or absence of hydrophytic vegetation during the field study, ensuring the wetland acreages determined were conservative and likely over representative of the actual aquatic features that would be delineated in a formal effort.

The areas identified as wetlands would likely be classified as wetlands in a formal delineation because they "(A) exhibit riparian vegetation, (B) have naturally-occurring hydrology, and (C) are likely underlain by hydric soils" (Cirrus, 2025). Furthermore, the aquatic resources sites would likely be considered jurisdictional Waters of the United States (WOTUS) by the USACE due to their proximity to the North Fork of the Ogden River, which is a tributary of the Ogden River, which discharges into the Great Salt Lake, a known navigable waterway (Cirrus, 2025). Thus, all wetlands identified in the conservative determination have been assumed to be jurisdictional/WOTUS in this Plan-EA. A total of 13.21 acres of aquatic resources were identified in the study area. Table 3-5 identifies the conservative acreages identified by Cirrus and the Cowardin Classifications of each of the aquatic resource sites. The full tabular data, methodology, site maps, photos, and other data are located in Cirrus's Aquatic Resources Inventory Report, located in Appendix E.

Table 3-5: Aquatic Resources in the Study Area (Cirrus, 2025)

Wetland Type	Cowardin Classification	Acres
Stream Channel	Riverine, Upper perennial, Unconsolidated shore, Cobble-gravel/sand, Permanently flooded	2.04
Scrub-Shrub	Palustrine, Scrub-shrub, Broad-leaf deciduous, Seasonally saturated	1.40
Scrub-Shrub	Palustrine, Scrub-shrub, Broad-leaf deciduous, Seasonally flooded	6.14
Palustrine Emergent	Palustrine, Emergent, Persistent, Seasonally flooded/saturated	2.29
Open Water	Palustrine, Unconsolidated bottom, Mud, Seasonally flooded	1.34
	TOTAL	**13.21**

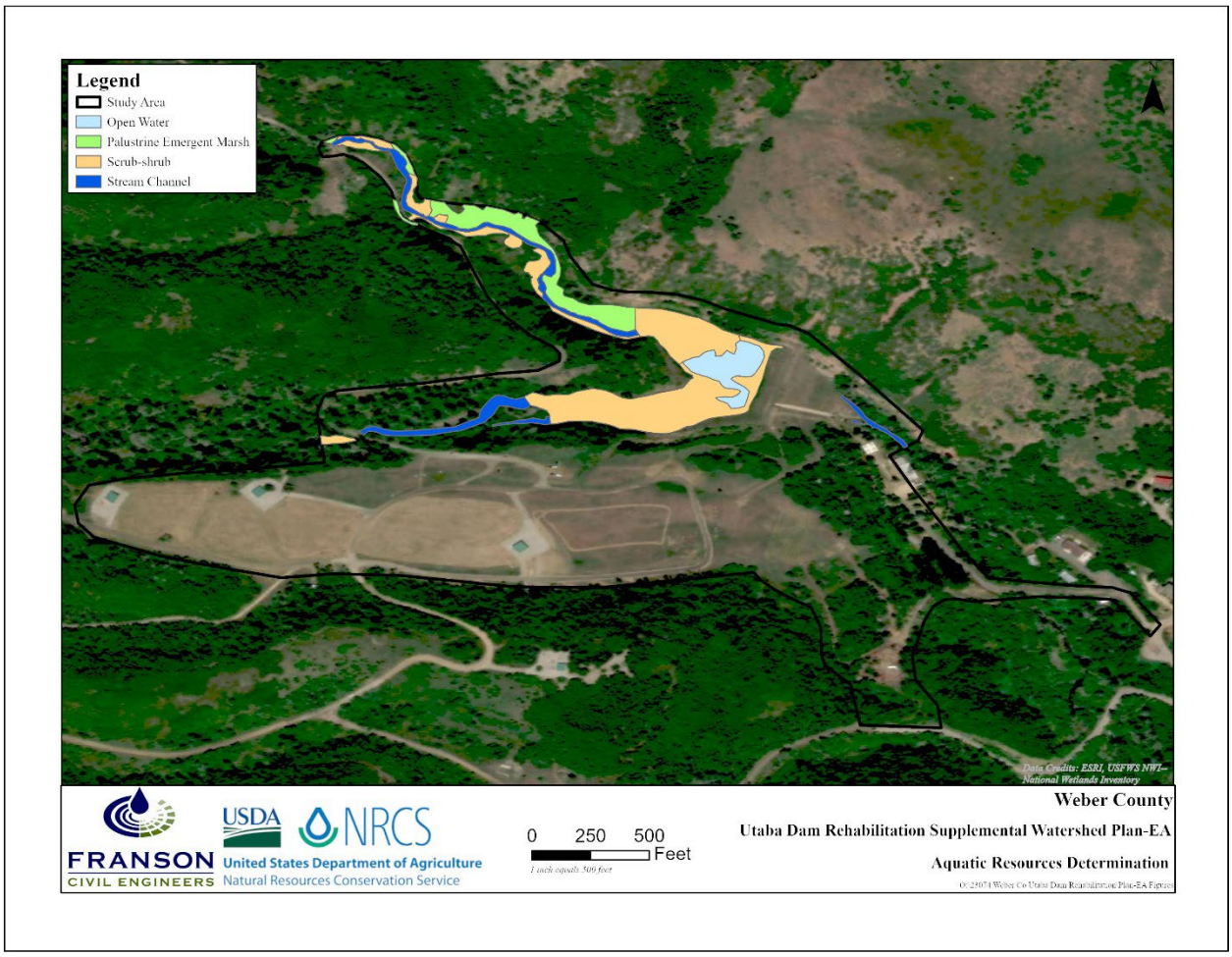

Figure 3-6: Aquatic Resources Determination

3.2.8 Air Quality

The Clean Air Act (CAA) is a federal law that regulates air pollution nationwide. The CAA requires the EPA to institute National Ambient Air Quality Standards (NAAQS) for six primary air pollutants to protect public health and welfare. These pollutants include carbon monoxide, particulate matter, ozone layer, nitrogen dioxide, lead, and sulfur dioxide (EPA, 2018). Particulate matter includes fine particles that are 2.5 micrometers or smaller ($PM_{2.5}$) and fine particles that are 10 micrometers or smaller (PM_{10}). Air quality conditions are designated as "attainment," "maintenance", "nonattainment", or "unclassifiable". Areas that do not exceed the NAAQS are designated as attainment, while areas that exceed the standards are designated as nonattainment.

The EPA has given Weber County nonattainment status for the criteria pollutants of $PM_{2.5}$ (serious rating) and 8-hour ozone (moderate rating) in 2024. The county has previously been listed as a nonattainment area for carbon monoxide (maintenance redesignation in 2001) and PM_{10} (maintenance redesignation in 2020). The county is in attainment for the other criteria pollutants. Thus, Weber County has a partial attainment status under the NAAQS.

3.2.9 Threatened and Endangered Botanical Species

The Endangered Species Act (ESA) provides protection to federally listed, threatened, and endangered species and their designated critical habitats under the jurisdiction of the U.S. Fish and

Wildlife Service (USFWS). An official species list was obtained from the USFWS Information for Planning and Consultation (IPaC) system on August 26, 2024, and last updated on March 12, 2025 (Appendix E). The official species list identified the botanical species identified in Table 3-6 as being potentially present in the project area. However, it is stated that no critical habitat was identified in the project area.

Habitat suitability and presence/absence surveys for the ULT were conducted on August 3, 2024, and July 27, 2025 (Attachment E; Cirrus 2025b), to identify suitable habitat and to determine if the habitat was occupied. Prior to the surveys, a ULT reference population was visited to confirm that flowering was occurring. Based on the reference population, the surveys were conducted during the confirmed ULT blooming window.

Potentially suitable habitat for ULT was identified in the Action Area along the North Fork Ogden River and Cutler Creek. After the first-year survey, the suitable habitat determination was confirmed through consultation with the USFWS (email communication with Reisor, Rita, USFWS, November 9, 2024). In addition, a site visit was held on May 6, 2025, including representatives from USFWS and NRCS. The USFWS recommended that surveys following approved survey protocol be performed during the blooming period in potentially suitable habitat along the stream channels but cleared the rest of the Action Area from needing surveys. Based on communications with the USFWS, the mapped suitable habitat was expanded in 2025, using a more liberal interpretation of ULT potential habitat, to include the areas shown in Figure 4 (Habitat Areas 1-11). In the process of surveying the suitable habitat polygons shown in Figure 4, the wetland areas shown in Figure 4 were also assessed and surveyed to verify habitat assumptions. No occurrences of ULT were found in the Action Area during either the 2024 or 2025 surveys.

Based on the findings of the surveys and the fact that no disturbance would occur within 300-feet from any suitable ULT habitat, a May Affect; Not Likely to Adversely Affect determination was made for the species in the Biological Assessment (BA), located in Appendix E. USFWS concurrence on the Biological Assessment (BA) for the project was received on February 18, 2026.

Table 3-6: Threatened and Endangered Botanical Species

Species	Status	Habitat	Present?
Ute Ladies'-Tresses (*Spiranthes diluvialis*)	Threatened	Moist to wet soils in mesic or wetland habitat associated with springs, lakes, and perennial streams. The elevation range of occupied habitat is 700 to 7,000 feet throughout the species range. Most occurrences are along riparian edges, gravel bars, old oxbows, and moist-to-wet meadows. Some localities are near freshwater lakes and springs/groundwater discharge zones.	No. However, suitable ULT habitat was identified in the project area.

Sources: U.S. Fish and Wildlife Service's Information, Planning, and Consultation (IPaC) online services, (*https://ecos.fws.gov/ipac/*), last updated on March 12, 2025. Biological Assessment for the Utaba Dam Rehabilitation Plan-EA (March 2025).

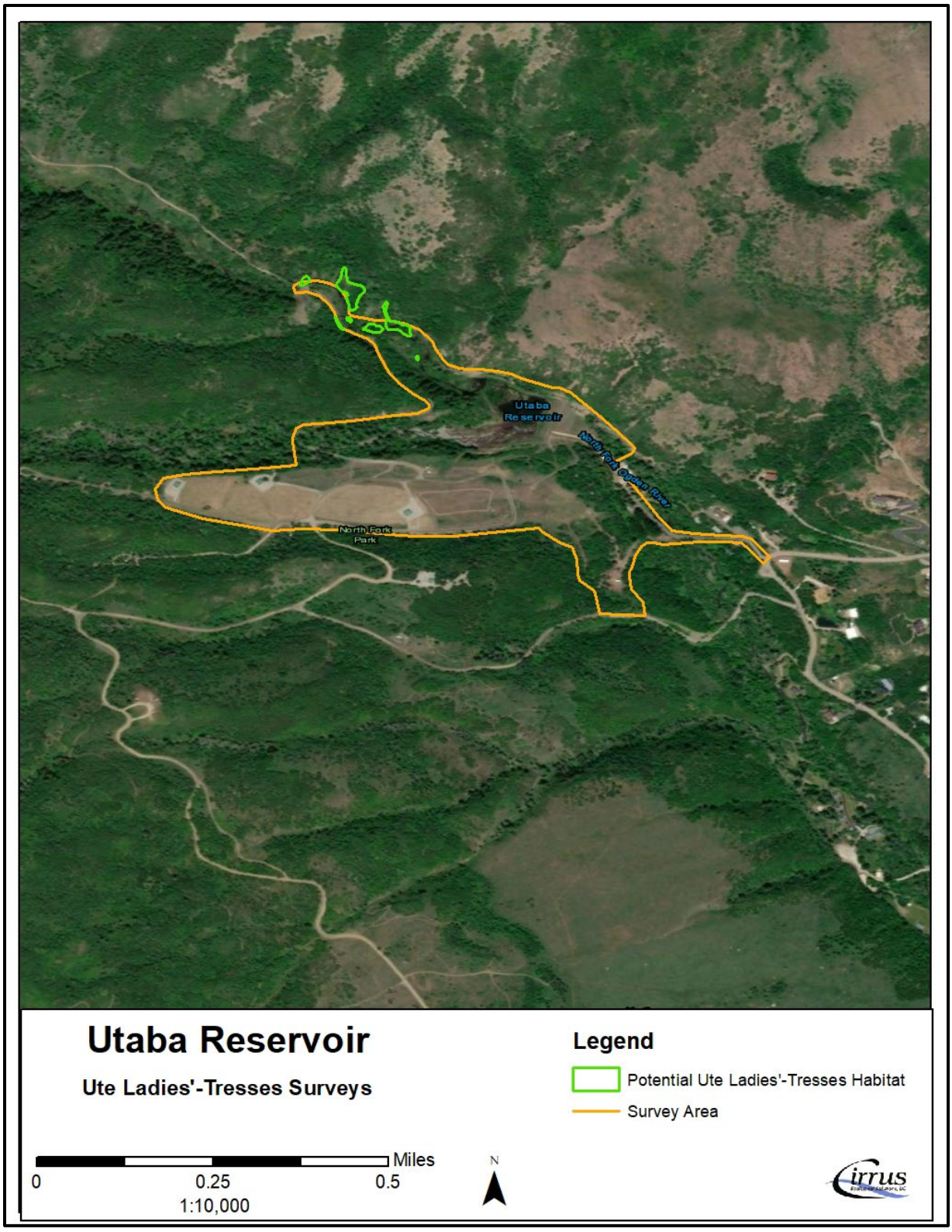

Figure 3-7: Ute Ladies'-Tresses Habitat Survey Map

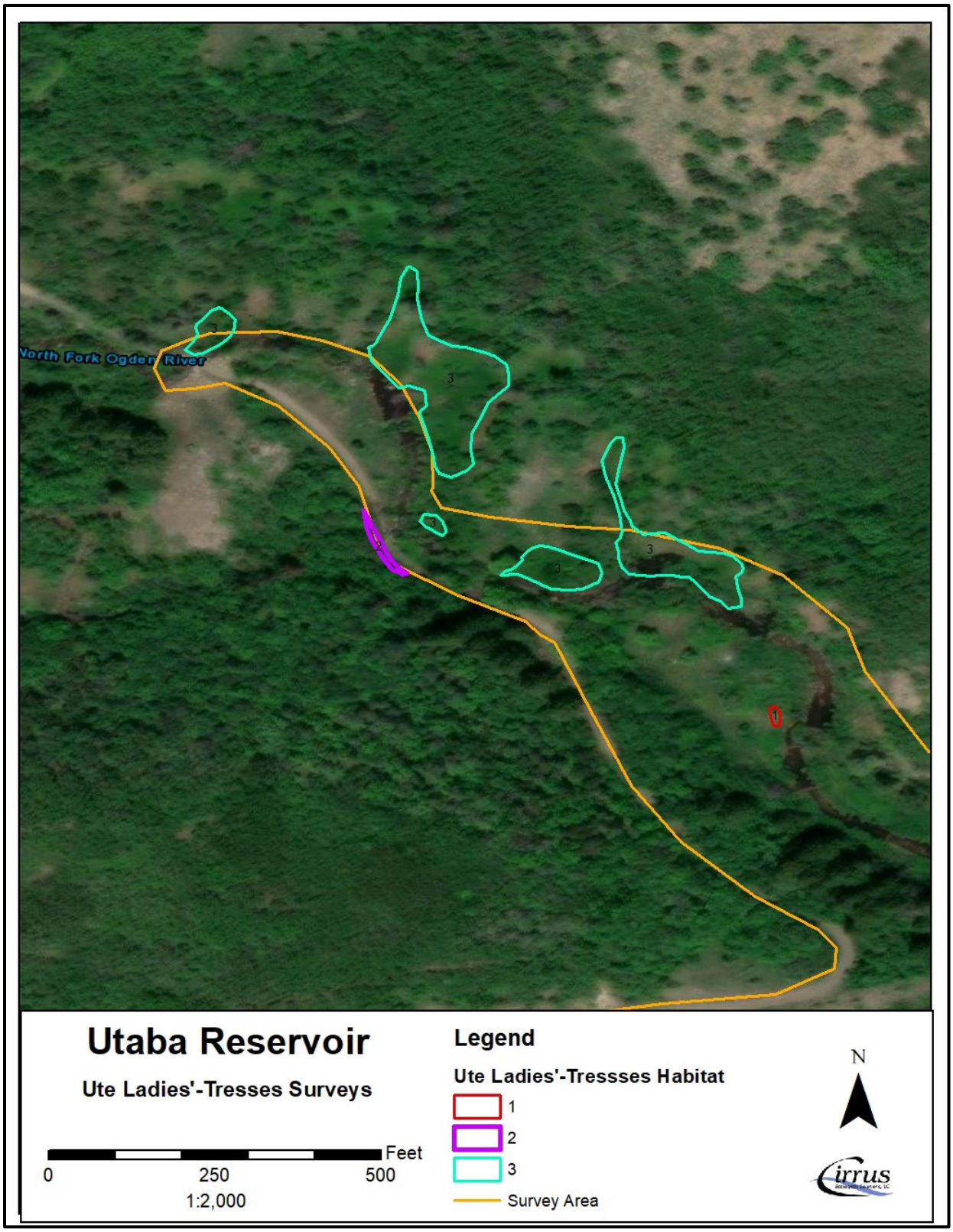

Figure 3-8: Ute Ladies'-Tresses Suitable Habitat Areas

3.2.10 Invasive Plants and Noxious Weeds

Invasive species are defined as non-native to the ecosystem and whose introduction or presence can likely cause economic or environmental harm, or harm to human health. Invasive species compete directly with native species for moisture, sunlight, nutrients, and space. Federal agencies were directed in Executive Order (EO) 13112 to expand and coordinate their efforts to combat the introduction and spread of plants not native to the United States. Noxious, or invasive weeds are plants designated by the federal, state, or county government as injurious to public health, agriculture, recreation, wildlife, or property. There are 54 weeds on Utah's noxious weed list, as of 2021 (Utah Weed Control Association, 2021). The weeds are classified into the following categories:

- Class IA – Early Detection Rapid Response (EDRR) Watch List
- Class IB – Early Detection (ED)
- Class II – Control
- Class III – Containment
- Class IV – Prohibited

Table 3-7 below shows a series of invasive plant species that may occur within Weber County. The weeds in the table were identified by the Weber County Weed Control Department as being the noxious weeds with the greatest impact in the county:

Table 3-7: Potentially Occurring Invasive Plants in Weber County

Common Name	Taxonomy	Utah Status
Yellow Starthistle	*Centaurea solstitialis*	Class II
Purple Loosestrife	*Lythrum salicaria*	Class II
Phragmites (Common Reed)	*Phragmites australis ssp.*	Class III
Dyer's Woad	*Isatis tinctoria*	Class II
Puncturevine (Goathead)	*Tribulus terrestris*	Class III
Dalmatian Toadflax	*Linaria dalmatica*	Class II
Myrtle Spurge	*Euphorbia myrsinites*	Class IV
Leafy Spurge	*Euphorbia esula*	Class II
Whitetop (Perennial Pepperweed)	*Lepidium latifolium*	Class III
Houndstongue	*Cynoglossum officianale*	Class III
Field Bindweed	*Convolvulus spp.*	Class III
Bermudagrass	*Cynodon dactylon*	Class III
Russian Knapweed	*Acroptilon repens*	Class III
Scotch Thistle	*Onopordium acanthium*	Class III

Source, *Weber County Weed Control,* Weber County Weed Control (webercountyutah.gov)

3.2.11 Riparian Areas

Riparian areas are directly influenced by a watercourse or waterbody. They typically exist along lakes, rivers, streams, and constructed waterbodies such as ditches, canals, ponds, and reservoirs. Riparian areas are of special ecological importance because they support a wide variety of botanical species and are critical habitats for wildlife.

As part of the Weber County Resource Assessment completed by the Wasatch Front Regional Council (WFRC), riparian areas were considered as a resource of concern. As can be seen in the wetlands/WOTUS section of this chapter (section 3.2.7), the NWI identified riverine environments along the North Fork Ogden River and Cutler Creek as they meet at Utaba Reservoir. The areas along the streams upstream of the dam may be classified as riparian areas. However, the Utah Watershed Restoration Initiative (UWRI) mapper was accessed and filtered for aquatic/riparian treatment areas associated with the UWRI program and no sites were identified in or adjacent to the project area.

3.2.12 Threatened and Endangered Animal Species

The Endangered Species Act (ESA) provides protection to federally listed, threatened, and endangered species and their designated critical habitats under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS).An official species list was obtained from the USFWS Information for Planning and Consultation (IPaC) system on August 26, 2024, and last updated on March 12, 2025 (Appendix E). The official species list identified the animal species identified in Table 3-8 as being potentially present in the project area. However, it is stated that no critical habitat was identified in the project area. This was confirmed in the Biological Assessment (BA), located in Appendix E.

A habitat suitability assessment for the Western Yellow-billed Cuckoo (WYBC) was conducted on July 10, 2024, by Cirrus Ecological Solutions. The study was done to determine if any suitable WYBC habitat exists within the study area. The survey identified four areas potentially meeting the requirements for suitable WYBC habitat. These areas are shown in Figure 3-9. Three of the four areas were surveyed for suitability, with one downstream corridor not accessible because of non-cooperation of the landowner.

The WYBC is a shy bird and is not typically found in areas of high residential development or human activity. Because of this, the potentially suitable habitat identified south of the reservoir along the North Fork Ogden River (red polygons in Figure 3-9) are less likely to provide suitable WYBC habitat due to ongoing disturbance, nearby residential development, and large gaps in the habitat patches. All these factors, in combination with the general rarity of the species in Utah and the bird's shy nature, would discourage the WYBC from nesting in the area. Although no observations of WYBC have been reported in the study area, there have been observations of WYBC within 10 miles to the south of the study area (UDWR, 2024).

Coordination occurred with NRCS and USFWS to make a determination of habitat suitability for the species in the four potentially suitable areas. The USFWS determined that due to the various factors identified in the preceding paragraph, only the two corridors upstream of the dam (green polygons in Figure 3-9) would be surveyed for WYBC individuals. The downstream areas, although potentially suitable, would not be surveyed due to the extremely low probability of occurrence and the fact that the areas would not be directly worked in during implementation of any considered alternatives.

Cirrus conducted a presence/absence survey in 2025 for the WYBC. The survey followed standard USFWS protocol and took place between May and August 2025 with four survey periods in that timeframe. No WYBC individuals were detected in the study area during that time. Based on the survey results, an effects determination of May Affect Not Likely to Adversely Affect (MANLAA) was made for the species. This is documented in the BA located in Appendix E. The USFWS concurred with the MANLAA determination on February 18, 2026.

Table 3-8: Threatened and Endangered Animal Species

Species	Status	Habitat	Habitat and/or Individuals Present?
Canada Lynx (*Lynx canadensis*)	Threatened	Closely associated with boreal spruce-fir ecosystem. Requires deep snow, dense horizontal forest cover with high snowshoe hare populations, and underbrush covering a large tract (USFWS, 2024).	No. Due to the proximity of the area to human activity, lack of horizontal forest cover, and lack of significant snowshoe hare populations.
North American Wolverine (*Gulo gulo luscus*)	Threatened	Associated with large, high elevation habitat tracts within the boreal forest ecosystem and the Rocky Mountains (USFWS, 2023).	No. Due to the proximity of the area to human activity and lack of landscape structure to support den sites.
Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)	Threatened	Wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation and thickets along streams and marshes (USFWS, 2024).	Yes. 46 acres of potentially suitable habitat identified during 2024 habitat suitability survey. No individuals were identified during the 2025 presence/absence survey.
Monarch Butterfly (*Danaus plexippus*)	Proposed Threatened	Monarchs require milkweed, nectar sources, overwintering habitat, and migration habitat (USFWS 2024)	No. There is no milkweed, a necessity for suitable Monarch habitat, in the area.
Suckley's Cuckoo Bumble Bee *Bombus suckleyi*	Proposed Endangered	Require open grassy areas, urban parks, gardens, chapparal and shrub areas, and mountain meadows (Williams et. al.,2014). Last observed in Oregon in 2016.	No. There is no suitable habitat in the study area for the Suckley's Cuckoo Bumble Bee.

Sources: U.S. Fish and Wildlife Service's Information, Planning, and Consultation (IPaC) online services, (*https://ecos.fws.gov/ipac/*),. Biological Assessment for the Utaba Dam Rehabilitation Plan-EA.

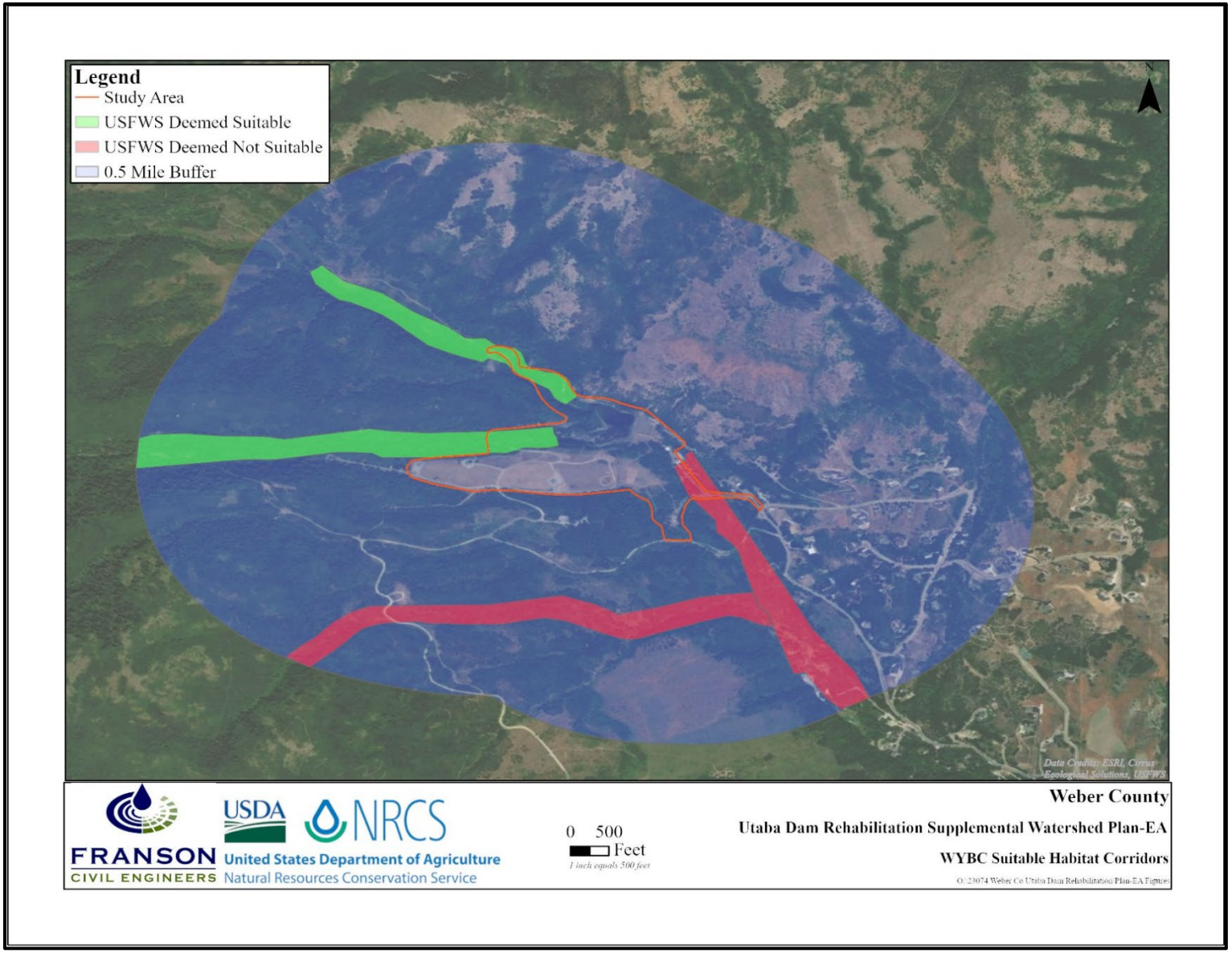

Figure 3-9: WYBC Suitable Habitat Corridors Map

3.2.13 Utah Special Status Animal Species

The project area was evaluated for Utah State sensitive species and Species of Greatest Conservation Need (SGCN) in the Utah Division of Wildlife Resource's (UDWR) Natural Heritage Program on August 26, 2024 (see Appendix E for full report). These species were evaluated for their potential to occur within a 0.5-mile or 2-mile radius of the action area as a part of the project's Biological Assessment (Appendix E). Findings are displayed in Table 3-9 below.

Table 3-9: Utah Species of Greatest Conservation Need in the Project Area

Species	Taxonomy	Potential Occurrence Radius
Bald Eagle	*Haliaeetus leucocephalus*	0.5 Mile and 2-Miles
Bonneville Cutthroat Trout	*Oncorhynchus clarkii utah*	0.5 Mile and 2-Miles
Greater Sage Grouse	*Centrocercus urophasianus*	2-Miles

Sources: Utah Department of Natural Resources (UDNR) Utah Natural Heritage Online Species Search Report, August 26, 2024. Biological Assessment for the Utaba Dam Rehabilitation Project, March 2025.

3.2.13.1 Bald Eagle Habitat

Bald Eagles usually nest near waterbodies or watercourses that provide prey habitat. Tall trees near open water provide excellent wintering and hunting habitat. These trees also provide night roosts for sheltering. Typically forest land covered by evergreen trees in cool, northern latitudes (USFWS, 2024).

3.2.13.2 Bonneville Cutthroat Trout Habitat

The Bonneville Cutthroat Trout typically lives in isolated smaller populations in the headwaters of mountain streams in the lakes of the Bonneville Drainage Basin. They spawn near the mouths of streams over gravel substrate in the spring (USFWS, 2024).

3.2.13.3 Greater Sage Grouse Habitat

The Greater Sage Grouse only lives in habitats that may be classified as Intermountain West sagebrush steppe. This includes broad ridgetops, grassy swales, dry lakebeds, recently burned areas, irrigated pastures, wet meadows, alfalfa fields, and sagebrush (USFWS, 2024).

3.2.14 Fish and Wildlife

Fish and wildlife species and their habitats are managed on multiple federal and state levels. Wildlife populations that are most understood are those that are documented and listed for protection under the ESA (see sections 3.2.9 and 3.2.12), state SGCNs (see section 3.2.13), or desired game. Other wildlife species around the project area are listed below. Migratory Birds will be discussed as a separate resource concern in section 3.2.15. Further information on species that may occur in the study area may be found in Appendix E.

3.2.14.1 Fish

There is no data currently available on the fish species at Utaba Reservoir. However, the UDWR lists the following fish species as being likely or possible to occur at Pineview Reservoir, downstream of the dam.

Table 3-10: Fish of Interest in Pineview Reservoir

Species	Taxonomy	Native/Introduced
Black Crappie	*Pomoxis nigromaculatus*	Introduced
Largemouth Bass	*Micropterus salmoides*	Introduced
Smallmouth Bass	*Micropterus dolomieu*	Introduced
Tiger Muskie	*Esox masquinongy*	Introduced
Yellow Perch	*Perca flavescens*	Introduced
Black Bullhead Catfish	*Ameiurus melas*	Introduced
Bluegill	*Lepomis macrochirus*	Introduced
Common Carp	*Cyprinus carpio*	Introduced
Green Sunfish	*Lepomis cyanellus*	Introduced
Bonneville Cutthroat Trout	*Oncorhynchus clarkii utah*	Native
Rainbow Trout	*Oncorhynchus mykiss*	Introduced
Brown Trout	*Salmo trutta*	Introduced

Source: Utah Division of Wildlife Resources, Fish Utah Database, Pineview Reservoir (2024).

3.2.14.2 Wildlife

A review of the Weber County iNaturalist webpage (Weber County, US, UT iNaturalist), which tracks citizen observations of plant and animal species, was used to identify vertebrate wildlife species that have been known to occur in the project area.

Mammals that may occur in Weber County include the Mule Deer (*Odocoileus hemionus*), Moose (*Alces alces*), American Red Squirrel (*Tamiasciurus hudsonicus*), Common Raccoon (*Procyon lotor*), and American Beaver (*Castor canadensis*). Reptiles that may occur in Weber County include the Western Terrestrial Garter Snake (*Thamnophis elegans*), Gopher Snake (*Pituophis catenifer*), and the Western Rattlesnake (*Crotalus oreganus*). Amphibians that may occur in Weber County include the Boreal Chorus Frog (*Pseudacris maculata*), Western Toad (*Anaxyrus boreas*), and the Columbia Spotted Frog (*Rana luteiventris*).

3.2.15 Migratory Birds and Eagles

USFWS is mandated by the Fish and Wildlife Conservation Act to identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the ESA of 1973. The Bald and Golden Eagle Protection Act (BGEPA) provides special attention to the Bald and Golden Eagle. Features in the area surrounding the study area such as riparian areas, wetlands, fence lines, tall trees, and power lines may provide perches and temporary foraging areas for migratory birds.

Table 3-11 below identifies the migratory bird species with the potential to occur within the Action Area as identified by the USFWS IPaC resource list. These species are also evaluated in the Biological Assessment in Appendix E. All species in the table are Birds of Conservation Concern (BCC).

Table 3-11: Migratory Birds List

Species	Taxonomy	Habitat	Habitat Present?	Breeding Season
Bald Eagle	*Haliaeetus leucocephalus*	Almost always nests in tall trees and commonly near bodies of water where fish and waterfowl prey are available.	Nesting or stopover habitat may occur. The UNHP documents occurrence of this species within 0.5 miles of the Action Area.	December 1 to August 31
Golden Eagle	*Aquila chrysaetos*	Generally, prefers open habitats, surrounded by cliffs, cliff edges, or mountains which is also where they choose to nest.	No/Unlikely.	December 1 to August 31
Broad-tailed Hummingbird	*Selasphorus platycercus*	Mountain meadows, forest edges, and open woodlands.	No/Unlikely	May 25 to August 21
California Gull	*Larus californicus*	Preferred habitat includes lakes and marshes.	Foraging or stopover habitat may occur within the Action Area.	March 1 to July 31
Cassin's Finch	*Haemorhous cassinii*	Occupies a variety of coniferous forest types, often in mature forests of lodgepole and ponderosa pine, over a broad elevation range.	No/Unlikely.	May 15 to July 15
Clark's Nutcracker	*Nucifraga Columbiana*	High mountains, conifers near tree line. Open or broken forest of pine, spruce, or Douglas fir.	No/Unlikely.	January 15 to July 15
Evening Grosbeak	*Coccothraustes vespertinus*	Breeds in coniferous and mixed forests, also associated with pine trees.	Foraging or stopover habitat may occur within the Action Area.	May 15 to August 10

Species	Taxonomy	Habitat	Habitat Present?	Breeding Season
Flammulated Owl	*Psiloscops flammeolus*	Breeds in mature, open forests that include ponderosa pine or other large coniferous trees. Will nest in burned forest.	No/Unlikely	May 10 to August 15
Lewis's Woodpecker	*Melanerpes lewis*	Ponderosa pine forest, open riparian woodland dominated by cottonwood, or logged/burned pine forest.	Foraging or stopover habitat may occur within the Action Area.	April 20 to September 30
Long-eared Owl	*Asio otus*	Nests in densely wooded areas in trees. Prefers to live in woodlands, conifer groves.	Foraging or stopover habitat may occur within the Action Area.	March 1 to July 15
Olive-sided Flycatcher	*Contopus cooperi*	Montane and Northern coniferous forests, forest edges, meadows, and ponds/wetlands.	No/Unlikely	May 20 to August 31
Virginia's Warbler	*Leiothlypis virginiae*	Typically prefers Pinyon-Juniper woodlands.	No/Unlikely	May 1 to July 31

Sources: U.S. Fish and Wildlife Service's Information, Planning, and Consultation (IPaC) online services, (3), last updated March 12, 2025. Utah Division of Wildlife Resources Natural Heritage Program Online Species Search Report dated August 26, 2024.

3.2.16 Socioeconomics

This resource concern will seek to address the national, local, and regional economic setting of the affected environment that may be sensitive to changes associated with the Proposed Action. Socioeconomic factors include the local demographics, income characteristics, and employment of the study area potentially affected by the Proposed Action. The study area for socioeconomic analysis for this Watershed Plan-EA was identified as Weber County, Utah. In this section, demographic and economic data from Weber County is compared with those of the state for regional context of socioeconomic conditions. The data supporting the analysis was collected from the U.S. Census Bureau (USCB).

3.2.16.1 Population Demographics

Data was gathered from the 2020 U.S. Census, including population distribution and population growth in Weber County. The following tables summarize this data.

Table 3-12: Population Distribution by Gender and Age Compared to the U.S.

Socioeconomic Criteria		Weber County	Utah	U.S.
Total Population		269,223	3,337,975	331,893,745
Gender	Female	48.99%	49.6%	50.8%
	Male	51.01%	51.4%	49.2%
Age	Under 5	6.4%	7.7%	6.0%
	5-19	22.4%	21.3%	16.3%
	20 -65	58.8%	59.6%	61.2%
	65 and over	12.4%	11.4%	16.5%

Source: 2020 U.S. Census

Table 3-13: Population Growth Compared to the U.S.

Population Year	Weber County	Utah	U.S.
Total Population 2000	196, 533	2,233,169	281,421,906
Total Population 2010	231,236	2,763,885	308,745,538
Total Population 2020	269,223	3,271,616	331,449,281

Source:2020 U.S. Census

Table 3-14: Hispanic or Latino Population Distribution Compared to the U.S.

Ethnicity	Weber County	Utah	U.S.
Hispanic or Latino	19.4%	14.4%	18.5%
Non-Hispanic or Latino	74.6%	85.6%	81.5%

Source: 2020 U.S. Census

Table 3-15: Distribution of Races within Weber County Compared to the U.S.

Race	Weber County	Utah	U.S.
White	91.6%	90.6%	76.3%
African American	1.8%	1.5%	13.4%
Asian	1.7%	2.7%	5.9%
American Indian and Alaska Native	1.4%	1.6%	1.3%
Native Hawaiian and Pacific Islander	0.4%	1.1%	0.2%
Identified by two or more	3.0%	2.6%	2.8%

Source: 2020 U.S. Census

3.2.16.2 Income Characteristics

Table 3-16 below summarizes the income characteristics of the project area including the median household income by family type and the poverty levels in the county.

Table 3-16: Income Characteristics within Weber County Compared to the U.S.

Type of Family	Weber County	Utah	U.S.
Families	$95,196	$102,177	$80,069
Married-Couples	$103,695	$111,564	$95,485
Nonfamily Homes	$46,694	$51,496	$39,027
All	$83,949	$89,168	$64,994

Source: 2020 U.S. Census

Table 3-17: Poverty Levels in Weber County Compared to Utah

Poverty Level	
Weber County	7.8%
Utah	8.2%
United States	11.4%

Source: 2020 U.S. Census

3.2.16.3 Employment

This section reviews the employment conditions in Weber County based on data from the 2020 U.S. Census. The employment rate in Weber County is 67.3% which is essentially equal to the statewide employment rate of 67.8%. Table 3-18 below describes the class of workers in Weber County.

Table 3-18: Weber County Class of Worker Distribution

Class of Worker	Percent of Workforce
Employee of Private Company Workers	65.1%
Self-Employed in Own Incorporated Business Workers	4.7%
Private Not-For-Profit Wage and Salary Workers	5.7%
Local, State, and Federal Government Workers	20.2%
Self-Employed in Unincorporated Business and Unpaid Family Workers	4.4%

Source: 2020 U.S. Census

Table 3-19 below describes the industry types for civilian workers in Weber County ages 16 years and older.

Table 3-19: Weber County Industry Type Distribution

Industry Type	Percent of Workforce
Agriculture, Forestry, Fishing and Hunting, and Mining	0.7%
Construction	9.5%
Manufacturing	12.5%
Wholesale Trade	2.3%
Retail Trade	9.5%
Transportation and Warehousing, and Utilities	5.4%
Information	1.1%
Finance and Insurance, Real Estate and Rental and Leasing	6.7%
Professional, Scientific, and Management, and Administrative, and Waste Management Services	9.9%
Educational Services, and Healthcare, and Social Assistance	20.3%
Arts, Entertainment, Recreation, and Accommodation and Food Services	7.6%
Other Services, Except Public Administration	3.7%
Public Administration	10.8%

Source: 2020 U.S. Census

3.2.17 Land Use

The National Land Cover Database (NLCD) (2023) was utilized to obtain information about the primary land uses in the planning area (Weber County). As can be seen in Figure 3-10 on the following page, the primary land uses/types in the study area include scrub shrub, deciduous and evergreen forest, and developed areas of open space or low intensity.

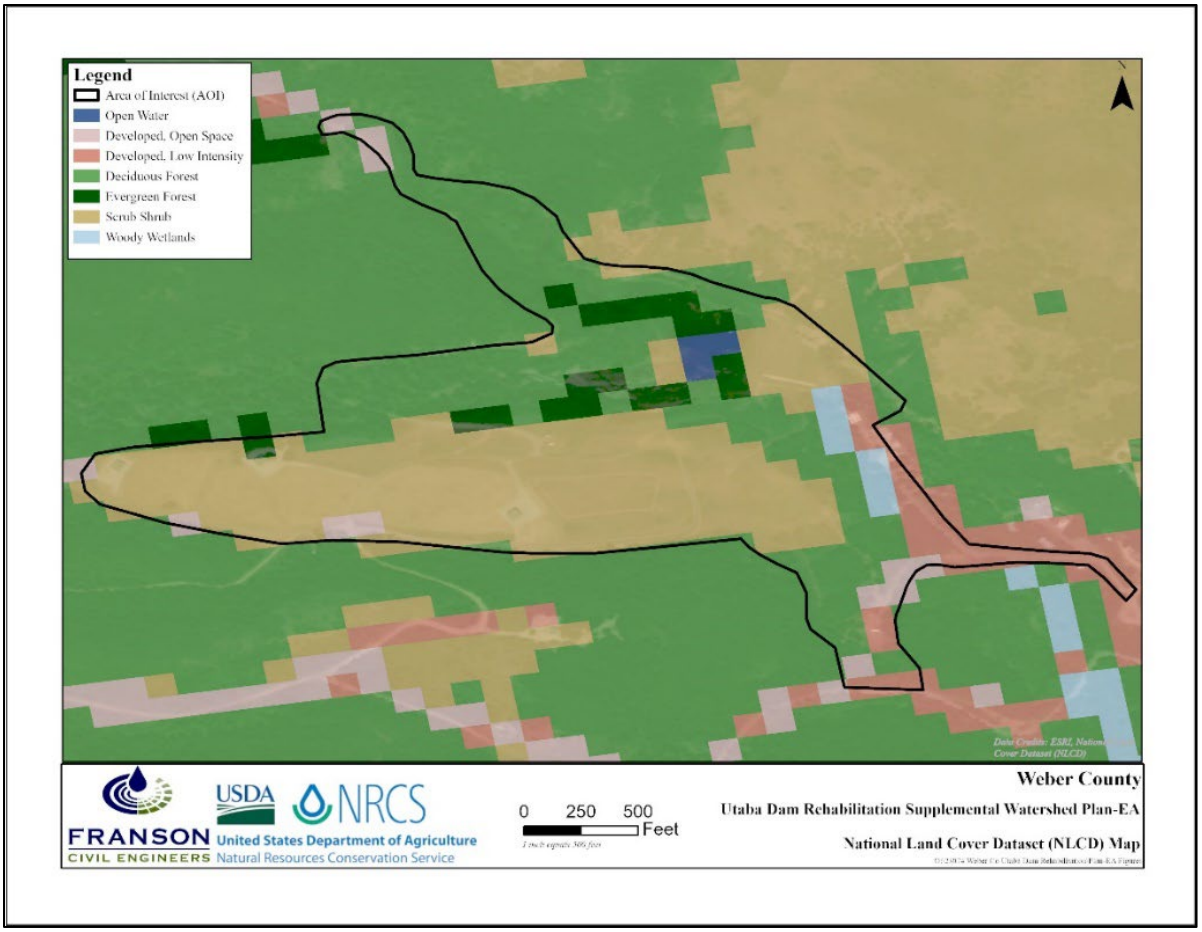

Figure 3-10: National Land Cover Dataset Map for Weber County

3.2.18 Cultural and Historic Resources

Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, mandates that the potential effects of a proposed federal undertaking on historic properties be considered. Historic properties are a subset of cultural resources that include prehistoric or historic districts, sites, buildings, structures, or objects that are at least 50 years of age and are included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). This definition for historic properties is used by the Advisory Council on Historic Preservation (ACHP) and in 36 CFR 800.16.

Archaeological sites, another subset of cultural resources, are defined by National Register Bulletin No. 36, "Guidelines for Evaluating and Registering Archaeological Properties," as "a location that contains the physical evidence of past human behavior that allows for its interpretation" (NPS, 2000). This definition is also used by the ACHP.

The affected environment for cultural resources is identified as the area of potential effects (APE), in compliance with the regulations found in Section 106 of the NHPA (36 CFR 800.16). The APE is defined 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. The area of potential effects is influenced by the scale and nature of an undertaking and may be different

for different kinds of effects caused by the undertaking" (36 CFR, 800.16(d)). A map of the direct APE is included in section 1.4.3 and a figure showing the Indirect/No Action APE is included in the Cultural Resources Report in Appendix E. The direct APE is 61 acres and includes all planned construction areas, staging sites, access roads, and borrow sources. The Indirect APE is 4,307 acres and includes the entire breach inundation and flood zones of Utaba Dam. To be eligible for listing on the National Register of Historic Places (NRHP), a cultural resource must possess significance in at least one of the following qualities: American history, architecture, archeology, engineering, or culture. These qualities must be present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, association, and that:

A. Are associated with events that have made a significant contribution to the broad patterns of our history; or
B. Are associated with the lives of significant persons in our past; or
C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction;
D. Have yielded, or may be likely to yield, information important in prehistory or history.

To identify historic properties within the Direct APE, per 36 CFR 800.4, and in consultation with the Utah State Historic Preservation Office (SHPO), applicable THPOs/Tribes, Camp UTABA, and the U.S. Army Corps of Engineers (USACE), a cultural resource inventory was conducted by Bighorn Archaeological Consultants on July 13, 2024. Jon Baxter, the surveyor, meets the Secretary of the Interior's (SOI) qualifications in archeology. The inventory included a file search and intensive field survey aimed at identifying cultural resources and historic properties within the Direct APE. The direct APE was surveyed, which included walking 50-foot-wide pedestrian transects around the reservoir area. The survey identified three cultural resources sites within the Direct APE.

Per 36 CFR 800.4(c), the NRCS evaluated the sites for their eligibility to the NRHP. Of those sites, the NRCS, through consultation. determined that Camp UTABA is eligible as a Historic District, and the remaining sites are not eligible for listing on the NRHP under any of the A-D criteria. As part of the desktop study performed by Bighorn Archaeological Solutions for the indirect APE (breach inundation zone), a total of four cultural resources were identified, including one archaeological site. Of the four identified sites, only one is considered eligible for the NRHP. Further details on the Indirect APE may be found in the redacted cultural resources report located in Appendix E. A redacted report with detailed information on methodology and the identified cultural resources is included in Appendix E, and a summary of these resources is provided in Table 3-20.

Table 3-20: Cultural Resources in the Direct APE

Site No.	Historic Sites	Site Eligibility
42WB593	Historic Camp UTABA	Eligible (as a Historic District)
42WB594	Utaba Historic Earthen Dam	Ineligible
Isolated Find (IF)	Two-Track GLO Road	Ineligible

Source: Cultural Resources Report (Bighorn Archaeological Consultants, 2024).

In compliance with Section 106 of the NHPA, the Utah State Historic Preservation Office (SHPO), Tribes, Tribal Historic Preservation Offices (THPOs), Camp UTABA, and the USACE, were consulted on the delineation of the Direct and Indirect APEs and determinations of site eligibility. The NRCS served as the designated lead federal agency (36 CFR 800.2). NRCS followed consultation protocols described in Section V.c.1 of the Prototype Programmatic Agreement between the NRCS and Utah SHPO where "NRCS may provide its proposed APE, identification of historic properties and/or scope of identification efforts, and assessment of effects in a single transmittal." A consultation letter was sent to the Utah SHPO on September 23, 2024. Following discussions with the Utah SHPO regarding the eligibility of 42WS593 (Camp UTABA), the NRCS resubmitted the consultation letter and deliverables, with a determination that 42WS593 is eligible for the NRHP as a Historic District. The Utah SHPO concurred with the APE and site eligibility determinations per 36 CFR 800.3(c), in a letter dated October 11, 2024.

Consultation letters were sent to the Tribes/THPOs on September 23, 2024, and received by the Tribes throughout September and October of 2024 (return receipts in Appendix A). Consultation with Camp UTABA began in October 2024 and continued into January 2025. Consultation with the USACE occurred in January 2025. Follow-up tribal consultation was conducted via email in November 2024 and by telephone in January 2025. The Ute Indian Tribe of the Uintah & Ouray Reservation THPO answered the phone and did not express any concerns. There were no other responses from THPOs/Tribes. Camp UTABA concurred on the eligibility of the camp as a Historic District during a virtual meeting with the NRCS on January 8, 2025. Documentation of the tribal consultation process may be found in the Tribal consultation table in Appendix A. The entire NHPA Section 106 consultation process is described in detail in chapter 7 of this Watershed Plan-EA, and all communication is found in Appendix A.

The Tribes/THPOs and other parties that were consulted are listed below:

- Northwest Band of the Shoshone Nation, Utah
- Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
- Skull Valley Band of Goshute Indians, Utah
- Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
- Confederated Tribes of the Goshute Reservation, Utah
- Shoshone-Bannock Tribes of the Fort Hall Reservation, Idaho
- USACE Sacramento District & Regulatory Division, Utah
- Camp UTABA (Reverand Dr. Curtis L. Price, First Baptist Church of Salt Lake City)
- Utah SHPO
- Public

3.2.19 Public Health and Safety

A total of 112 properties downstream of the dam would be at direct risk from a catastrophic failure of Utaba Dam. Furthermore, critical infrastructure downstream of the dam, including transportation routes are at risk from a catastrophic failure of the dam. Emergency access routes would be impacted by the flooding generated from a catastrophic dam breach, potentially impeding the ability of emergency services, including 9-1-1 services, to access residences during a disaster event (i.e., the dam failure). Finally, the most recent dam inspection report in 2022 noted that there is not currently adequate site security or public protection at Utaba Dam (referring to lack of signage and/or fencing).

3.2.20 Scenic Beauty and Visual Resources

The USDA's National Environmental Compliance Handbook (NECH) defines scenic beauty by taking into account the landforms, water, vegetation, structures, and other types of visual resources present in the study area. The dominant land cover types in the project area are (A) forest cover, (B) cleared park, and (C) water (when the reservoir is full). Utaba Dam is located upstream of suburban areas of Weber County, with several homes downstream and in the general vicinity. The Durfee Creek Homeowner's Association (HOA) owns a portion of the study area. The dam is used by Durfee Creek HOA members as an aesthetic cultural service but not for recreational purposes. Camp UTABA and North Fork Park are both used for recreational purposes (camping, picnicking, walking, etc.).

The viewshed throughout the study area is similar throughout, providing viewpoints of the woodland/forest, recreational/park, and suburban landscapes and their associated aesthetic qualities. During spring runoff, when Utaba Reservoir has water, visitors/campers can see the surface waters of the reservoir behind the dam, which generate particularly beautiful visual conditions, as shown in the figure below.



Figure 3-11: Viewshed at Utaba Reservoir from the North Side of the Embankment

Looking downstream from the dam, the viewshed consists primarily of elements of Camp UTABA (fire pits, picnic tables, cabins, etc.) as well as some of the nearby residences/houses of the Durfee Creek HOA. The reservoir is not visible from the park owned by Weber County, located south of Camp UTABA, due to the higher elevation and the dense tree cover surrounding the reservoir. The walking trail around the reservoir provides visitors with short-range viewsheds associated with dense forest cover, ground cover, and riparian vegetative conditions. Much like other locations in the study area, the walking trail's aesthetic quality is improved during spring runoff, when there is water in the reservoir.

3.2.21 Parklands

North Fork Park, which surrounds the study area, is designated as an International Dark Sky Place (IDSP) by Dark Sky International, meaning the area is protected for the conservation of the natural night sky. North Fork Park, in particular, is considered a unique IDSP for the following four qualities as defined by Dark Sky International:

- Urban Adjacency
- Intense Focus on Wildlife
- Extensive Outreach Program
- Innovative Public Art Incorporating Dark Sky Themes

The project area does not overlap any other parklands.

3.2.22 Noise

Current conditions in the study area as they relate to noise were evaluated in this Plan-EA. Noise analysis generally includes the identification of noise receptors and noise generators. Noise receptors are defined by the Federal Transit Administration (FTA) as "any locations of frequent human use where noise would have the potential to interfere with typical activities" (FTA Report No. 0123, 2018). Noise generators are more straightforward, as they are the activities which create (or generate) noise that could potentially impact noise receptors.

Current noise receptors in the study area include residential and recreational uses. The various summer camps in and around the study area as well as the several private residences are currently receptors of noise that occurs in the study area. There are no sensitive noise receptors in the study area (e.g., schools, hospitals, etc.).

Noise generators in the existing study area include natural sounds such as bird calls, wind, insects, etc. as well as the typical sounds generated by private residents. Noise is generated by water flowing over the spillway during spring runoff and from the North Fork Ogden River flowing. During the summertime, when Camp UTABA is active, noises associated with recreational use including activities and games are generated by camp attendees.

3.2.23 Transportation Infrastructure

There are two roads that currently provide access to the study area. The first is the North Fork Road which ends at the base of Utaba Dam at Camp UTABA. The second road is not named and begins adjacent to the reservoir in North Fork Park before crossing Cutler Creek and then the North Fork Ogden River and turning northwest to parallel the N. Fork Ogden River. The North Fork Road may also be accessed through the private spur road off of East 6890 North through the area where Camp UTABA maintains its septic system. 6925 North, or Durfee Creek Road, provides access to private residences of the Durfee Creek HOA, the end of this road also meets up with the road access to Camp UTABA.

The unnamed access road is accessed via E 6890 North as well by either going right at the junction, towards the North Fork Park View Bowery, or going left and then turning down another unnamed road and entering North Fork Park on the far west end.

3.2.24 OM&R Status of the Dam

Operation, maintenance, and replacement (OM&R) operations at Utaba Dam are the responsibility of Weber County and the Ogden Valley Soil Conservation District (now the Weber Conservation

District (WCD)) as outlined in the operation and maintenance agreement for the original watershed project dated May 12, 1961. Currently, Weber County is taking full responsibility for OM&R.

The most recent dam inspection occurred in October 2023 and found that the sponsor(s) are in compliance with the O&M agreement. The inspector noted accumulation of debris and vegetation and the need to upgrade the hazard classification of the dam from moderate to high during the inspection as well.

3.2.25 Dam Hazard Classification (NRCS and Utah) (subsection for reasons)

The Utaba Dam embankment crest does not meet current standards (TR 210-60 (NRCS) and R655-11 (Utah)). The embankment is 71 feet tall, 369 feet long, and 14 feet wide at the crest. The State of Utah requires a minimum embankment crest of the height of the embankment divided by five plus five feet. Written mathematically, that is: (height / 5) + 5 feet. With a height of 71 feet, the minimum embankment crest of the embankment must therefore be at least 19.2 feet. However, the NRCS requires a minimum embankment crest width of the height of the embankment plus 35 feet divided by 5 or (height + 35 feet) / 5. Therefore, the NRCS minimum embankment crest is 21.2 feet. The more conservative standard dictates what is required; thus, the minimum crest width is 21.2 feet.

There are many safety concerns with the dam. For example, there is no filter and drain system in the embankment. No filter and drain system means water may be able to move soil material in the dam downstream through the embankment itself and cause failure. According to the inspection done by Genterra, the ground water level is high on the downstream side of the dam. Also, the as-built drawings indicate that Utaba was built on highly fractured foundation rock. High groundwater coupled with the foundation rock being highly fractured may mean water is flowing uncontrolled through the foundation of the dam. There are currently no soil, stability, or drainage analyses available, which leaves many safety aspects of the embankment unknown. Geotechnical studies took place as a part of the planning process to address these concerns. The findings of these studies are documented in a separate geotechnical report located in Appendix E. Additional geotechnical studies will take place during the design and permitting process to obtain additional details prior to construction.

The NRCS National Engineering Manual (NEM), Part 520, Subpart C – Dams, defines High Hazard Potential dams as structures where failure may cause loss of life or serious damage to homes, industrial or commercial buildings, important public utilities, main highways, or railroads. The existing dam has a hazard potential classification of “moderate”, which is equivalent to a “significant” hazard potential classification by NRCS. The most recent inspection in October 2023, which included members from the NRCS, SLO, and Utah Dam Safety, recommended that the dam’s hazard classification be changed from “moderate” to “high”. This recommendation was made because Utaba Dam currently experiences several deficiencies, putting it at risk of failure, and has also seen an influx of people downstream of the dam since it was constructed.

Additional supporting information is located in Appendix D as well as in the Existing Conditions technical memo in Appendix E. The structural table in Chapter 6 _Table 6-5) shows as-built and existing structural data for Utaba Dam.

3.2.26 Potential Modes of Dam Failure

Dams are built for the conditions that existed or could reasonably be anticipated at the time of their original design. Sometimes these conditions change, which can increase the risk of dam failure.

There is extensive damage and high use on the auxiliary spillway of the dam, making it highly likely to fail. Its location on the embankment means that if it were to fail, the entire dam is likely to fail and flood the downstream area. Three potential modes of failure were evaluated for Utaba Dam. An aerial photo of the existing auxiliary spillway is shown in the figure below.



Figure 3-12: Aerial View of Auxiliary Spillway, June 2024

3.2.26.1 Piping Failure

The first potential mode of failure would be a piping failure. This type of failure occurs as a more internal type of failure than other modes where the movement of one type of fill in the embankment would migrate into another, more porous, fill in the embankment, creating void spaces. As water flows through these void spaces, the embankment would erode and weaken, eventually resulting in a failure (breach) of the dam.

3.2.26.2 Dam Overtopping Failure

The second potential mode of failure would be the overtopping of the dam during a flood event due to the undersized auxiliary spillway. As soon as water began flowing over the dam, it would quickly erode the dam and cause a breach. Although the undersized and failing auxiliary spillway is the most immediate threat to the safety of the dam, an overtopping failure could occur in a larger storm event should the auxiliary spillway not fail for whatever reason.

3.2.26.3 Failure of Auxiliary Spillway

This potential mode of failure would be a failure below the auxiliary spillway floor. During even small flow through the auxiliary spillway, water could flow through the failed joints, eroding the soil below the spillway. When erosion and soil migration below the spillway becomes extensive, the concrete of the spillway would fail. This would cause water to flow uncontrolled on the earthen dam, causing rapid erosion and an eventual breach (failure) of the dam.



Figure 3-13: Repairs Along Auxiliary Spillway Wall, November 2020

3.2.27 Consequences of Dam Failure

The 2020 Dam Assessment Report for Utaba Dam prepared by Genterra Consultants, Inc. for NRCS outlines the consequences of the failure of Utaba Dam. The table below summarizes their findings.

Table 3-21: Consequences of Dam Failure (Genterra Assessment, 2020)

Consequence	Representative Metric	Value
Loss of Life	Maximum Population at Risk (PAR), 2020	Approximately 409 people make up the PAR for Utaba Dam.
Loss of Property	High, Medium, and Low Impacts to communities. The number of homes, businesses, and major buildings impacted.	Camps UTABA, Lomandi, and Zarahemla at "High" Risk. Weber County and Liberty at "Medium" risk, and Eden at "Low" risk. Approximately 82 homes, businesses, and major buildings impacted.
Lifeline Disruption	Municipal and supplemental water supply interruptions and irrigation water storage impacts.	Multiple municipal and supplemental water suppliers would be disrupted. Approximately 110 acre-feet of irrigation water from multiple sources, including Liberty Irrigation Company, would be interrupted.

Consequence	Representative Metric	Value
Infrastructure Disruption	Major and secondary transportation system crossings impacted at High, Medium, or Low levels by breach.	Major: North Fork Road (High), N 3300 E (Low), N 3800 E (Medium), E 4100 N (Medium). Secondary: Abbey Way (High), River's Edge Road (High), River Road (High).
Environmental Impacts	High, Medium, and Low adverse impacts to environmental conditions.	High: Bonneville Cutthroat Trout (sensitive species), Class I Riparian Areas on N. Fork Ogden River. Medium: Wetland and wildlife habitat upstream of Pineview Reservoir. Low: Songbirds, waterfowl, deer, blue grouse, bighorn sheep.
Social Impacts	High, Medium, and Low impacts on cultural and historic sites.	High: Church camps, North Fork Park (IDSP), Historic Sites at Liberty and Eden.
Economic Impacts	Average annual benefits attributed to the dam, updated workplan value (2020$)	$185,654 Average Annual Benefits.

3.2.28 Breach Analysis (Assumed Parameters)

As described in the preceding sections, numerous conditions exist that put Utaba Dam at risk of failure. The most probable mode of failure is the failure of the auxiliary spillway. The dam is expected to fail under all modeled flood events; however, the mechanism of failure varies by event magnitude. In smaller storm events, failure would occur through structural failure of the auxiliary spillway prior to the reservoir water surface reaching the crest of the dam. In larger storm events, overtopping of the dam would occur if auxiliary spillway failure had not already occurred due to its poor concrete condition. The hydraulic modeling for existing conditions represents the impact to homes, businesses, roads, and agricultural fields that would take place if a breach event occurred under existing conditions.

The following parameters were assumed in the breach model.

- The breach was assumed to happen at the auxiliary spillway.
- The most probable mode of failure was assumed to be failure of the auxiliary spillway at an elevation of 5,711 feet.
- Overtopping of the dam (5,720 feet) was evaluated as a secondary failure mechanism that would occur in larger flood events if the auxiliary spillway failure had not already occurred.
- The trigger for failure was when the elevation of the water in the debris basin reached the dam crest elevation or the maximum elevation the water reached within the debris basin.
- The final bottom width of the breach was 50 feet.
- Left- and right-side slope of the breach was 1:1.
- Breach weir coefficient was 2.6.
- Breach formation time was 0.5 hours.

The resulting peak flows are summarized in Table 3-23. The inflow represents flow coming into Utaba Reservoir. The outflow represents the peak outflows from Utaba Reservoir/Dam, whether it be from the principal and auxiliary spillways or from a dam breach. The breach model outflow hydrographs are shown in Appendices D and E to this Plan-EA.

Table 3-22: Existing Conditions Breach Analysis Peak Flows

Flood Events Modeled	Peak Inflow (CFS)	Peak Outflow (CFS)
2-Year	97	800
5-Year	186	2,183
10-Year	273	2,638
25-Year	387	3,061
50-Year	651	3,456
100-Year	1,017	3,835
200-Year	1,654	3,969
500-Year	2,944	4,237

Taking into account existing conditions, Utaba Dam is reasonably expected to fail in the near future due to the most probable dam failure mode, which is structural failure of the auxiliary spillway. Decreased storage in the reservoir, insufficient spillway capacity, and high amounts of runoff in the watershed basin contribute to the secondary risk of overtopping. The modeling for the No Action (FWOFI) Alternative represents the impact to homes, businesses, roads, and agricultural fields that would take place if a breach events occurred under existing conditions.

For purposes of evaluating existing conditions, it was assumed that the dam would ultimately fail due to failure of the auxiliary spillway. Hydraulic modeling of multiple storm events was conducted to characterize the range of potential hydraulic consequences and to demonstrate that dam failure would occur regardless of storm magnitude. However, the identification of the most probable failure mode is independent of storm frequency. Failure of the auxiliary spillway is expected to occur prior to overtopping across all modeled flood events, with overtopping representing a secondary, conditional failure mechanism that would only occur if auxiliary spillway failure had not already occurred.

The modeled breach was assumed to initiate at the auxiliary spillway crest elevation (5,711 feet). References to breach timing during smaller storm events reflect conservative hydraulic modeling assumptions and are not intended to imply separate hydrologically triggered failure modes or multiple independent dam failure events. For flood events larger than the 100-year event, overtopping would occur only if auxiliary spillway failure had not already occurred. Although, it highly unlikely that the auxiliary spillway would not have failed by that point.

The following was assumed in the breach model:

- The breach was assumed to initiate at the auxiliary spillway (elevation of 5,711 feet).
- The most probable mode of failure was failure of the auxiliary spillway under existing conditions.
- Overtopping at the top of the dam (5,720 feet) was evaluated as a secondary failure mechanism that would occur only if auxiliary spillway failure had not already occurred.
- The trigger for failure was defined by when the elevation of the water in the debris basin reached the maximum elevation or dam crest to represent the worst case condition for each storm event..
- Final bottom width of the breach was 50 feet.
- Left- and right-side slope of the breach was 1:1.
- Breach weir coefficient was 2.6.
- Breach formation time was 0.5 hours.

Figure 3-14 shows the existing conditions (No Action/FWOFI Alternative) breached/flood inundation area for the 100-year storm, maximum impact. Additional flood maps and details are located in the Flood Routing technical memo located in Appendix E of the Plan-EA. As can be seen in the figure, 47 structures would be inundated during the 100-year flood event.

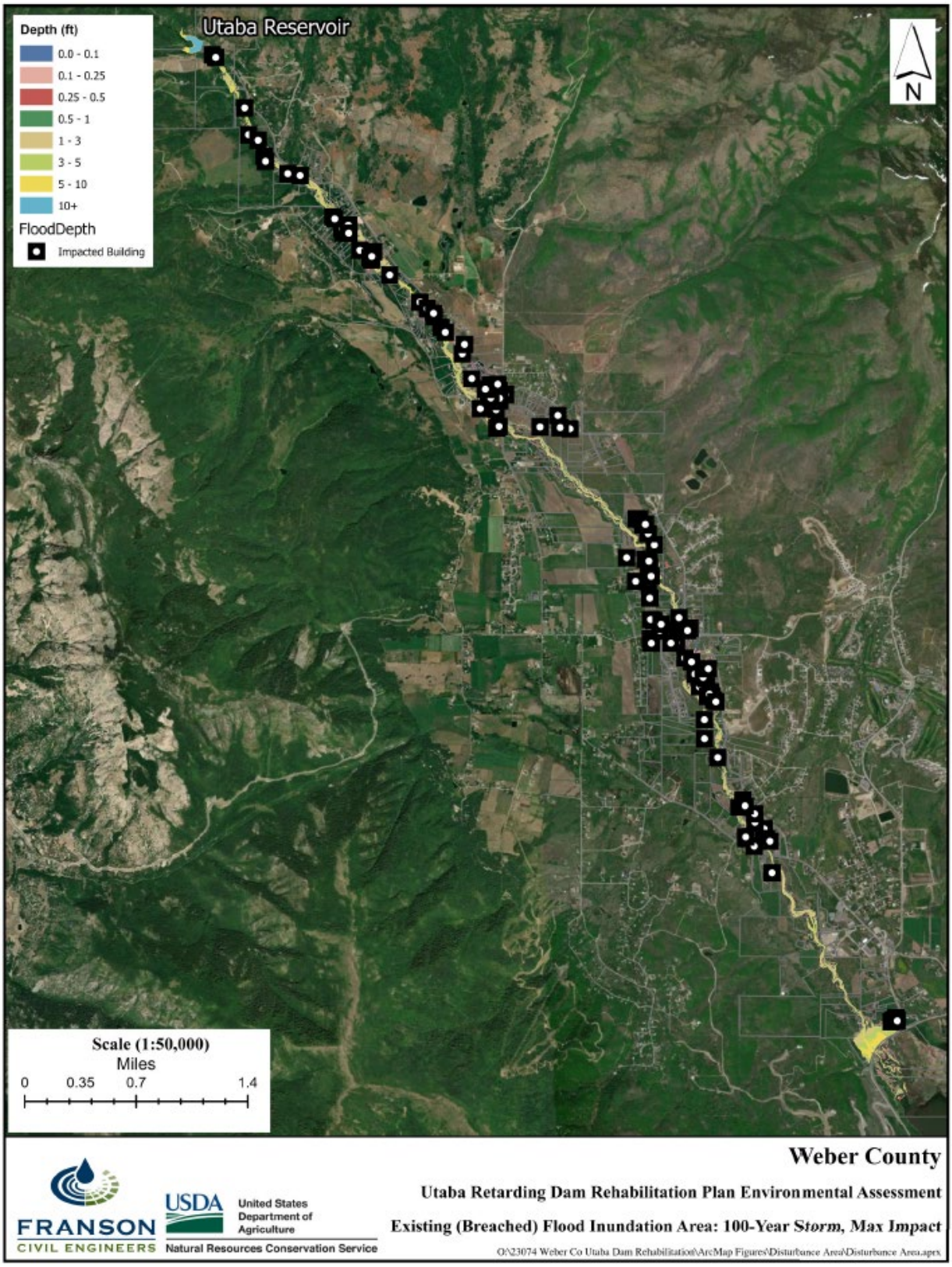

Figure 3-14: Existing (Breached) Flood Inundation Area, 100-Year Storm, Max Impact

3.2.29 Ecosystem Services

During the scoping process, ecosystem service benefits that currently exist in the watershed were identified. The scoping process identified provisioning, regulating, and cultural services in the watershed. The services identified also included intermediate supporting services, which is why those services were not carried forward in the ecosystem services analysis. The entire ecosystem services analysis is documented in the PR&G Ecosystem Services Scoping and Evaluation Worksheet located in Appendix E.

The provisioning services in the area result from the water quality of the North Fork of the Ogden River and Pineview Reservoir, which provide drinking and irrigation water. The areas irrigated with Pineview Reservoir water produce direct benefits from harvested crops that are used for various purposes. Additionally, a provisioning service is generated by the fish population in Pineview Reservoir which can be a source of sustenance for those who fish in the reservoir.

The regulating services in the study area include damages and safety hazards associated with flooding following a breach of Utaba Dam. Currently, the hazardous condition of Utaba Dam can allow for a reasonable prediction of future failure, incurring significant damages and potential loss of life or injury to residents downstream. Additionally, fire suppression capability is a regulating service in the area that is critical to buffer against harmful impacts of wildfire events. However, the resources for fire suppression in the area are somewhat limited and require expansion under current conditions.

Cultural services are present in the watershed. There are opportunities for walking, hiking, cycling, and other outdoor activities. Camp UTABA, and other various church-sponsored youth camps, are located downstream of Utaba Dam and provide an important cultural service to the youth who attend during the summertime. North Fork Park provides an important cultural service and contributes to aesthetic conditions, another service, by serving as an IDSP. Additionally, there is an inherent existence value to the Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) (WYBC) habitat, a federally Threatened species, located around Utaba Dam.

3.3 Forecast Future Conditions

The forecasting of future conditions in the watershed serves as a method to establish an analytic baseline against which the formulated alternatives may be compared against. This forecast considers all reasonably foreseeable large-scale processes in the natural, human, and economic environments. These forecasts are made to establish reasonably foreseeable impacts under the No Action/Future Without Federal Investment (FWOFI) Alternative.

The subsections below summarize the forecasted future conditions in environmental and socioeconomic resource conditions within the watershed in response to ongoing long-term processes.

3.3.1 Environment

The Utah State Hazard Mitigation Plan (SHMP) provides documentation of the expected future conditions for the state based on ongoing trends. It is expected that Utah will experience temperature increases, although how much temperatures will increase is not known (SHMP, 2019). These same models predict an overall decrease in precipitation throughout the southwestern United States (SHMP, 2019). If these forecasts hold true, Utah will experience increased drought frequency as a result of the increasing temperatures and decreased precipitation. This will, in turn,

have an impact on the frequency and severity of wildfires. The general trend nationwide is that more extreme weather patterns are expected, meaning that not only may drought become more frequent, but that flooding may also become more frequent as well. Extreme precipitation associated with monsoonal rainfall and warming temperatures will likely increase the number of flood events in Utah (SHMP, 2019). The ecological makeup of the state would be impacted. Increased average air and soil temperatures would likely favor botanical species more adapted to these soil conditions. Additionally, insects and pests would likely become more prevalent as the die-off period would not be as intense or last for as long.

3.3.2 Society

If existing conditions were to continue, Utaba Dam would continue to pose risks to life, injury, and property. Additionally, sediment would continue to deposit in the reservoir further decreasing its sediment storage capacity, reducing the effectiveness of the reservoir to reduce peak flood flows and remove sediment and debris, and creating a larger issue when the dam eventually breached. This would not be in line with the PR&G Guiding Principle of Healthy & Resilient Ecosystems or Watershed Approach.

As existing conditions continue, it can be reasonably forecasted that, at some point in the future, the dam will breach, and the event identified in the Indirect Area of Potential Effects (APE)/No Action APE would occur. This would damage cultural/historic sites in the watershed and other properties, depleting critical cultural services in the watershed.

3.3.3 Economy

Of course, damages resulting from the reasonably predicted future breach of the dam would require significant financial resources to mitigate. If no action is taken as a part of this project, the local economic conditions would have to endure the damages of a breach and their ensuing costs, which is not in line with the PR&G Guiding Principle of Sustainable Economic Development. There would also be higher drinking water treatment costs as a result of the sediment that would be washed downstream and discharged to Pineview Reservoir.

3.3.4 Ecosystem Services

The provision of the three ecosystem services considered in this Plan-EA would continue to degrade if existing conditions were allowed to continue. Provisioning services would deteriorate as sediment loading to Pineview Reservoir following a breach would degrade the water quality and make treatment more difficult. Additionally, fish populations in Pineview Reservoir would also likely experience adverse impacts as a result of the sediment loading caused by a breach, causing significant die off for certain species. Regulating services would remain in poor condition in light of the damage that would be caused by the dam breach and the predicted increase in flood, drought, and wildfire frequency according to long-term climate trends. Cultural services would be diminished if conditions continued as the eventual breach would impact youth camps, access to North Fork Park, and remove areas of suitable habitat for the WYBC. Additionally, these damages would cause aesthetic quality to decrease as well.

4.0 Formation of Alternatives

4.1 Alternative Formulation Process

Numerous action measures to fulfill the project purpose were identified in the development of Action Alternatives. The process of formulating alternatives was the basis for selecting combinations of measures to include as the Preferred Alternative (Proposed Action).

The alternative formulation process for this Supplemental Plan-EA followed the procedures outlined in the USDA-NRCS NWPM (NRCS 2024), NWPH (NRCS 2014), the PR&G (DR 9500-013), the Economic and Environmental Principles and Guidelines for Water and Related Land Resource Implementation Studies (US WRC, 1983), and other applicable NRCS watershed planning policies. Alternatives, also referred to as plans, are a set collection of specific project measures.

Conceptual project management measures were identified and presented to the public and interested agencies at meetings held during external scoping. These conceptual measures were then screened for pairwise compatibility with one another and combined into an initial array of alternatives. The initial array of alternatives were then taken through two rounds of screening in order to define the final array of alternatives.

An important component of alternative formulation is understanding how the entire PR&G and Ecosystem Framework fits into the process. Figure 4-1 describes the complete PR&G process and shows how the Proposed Actions are all tied to the PR&G Guiding Principles and the Ecosystem Services Framework, bringing about a social value for residents of the watershed.

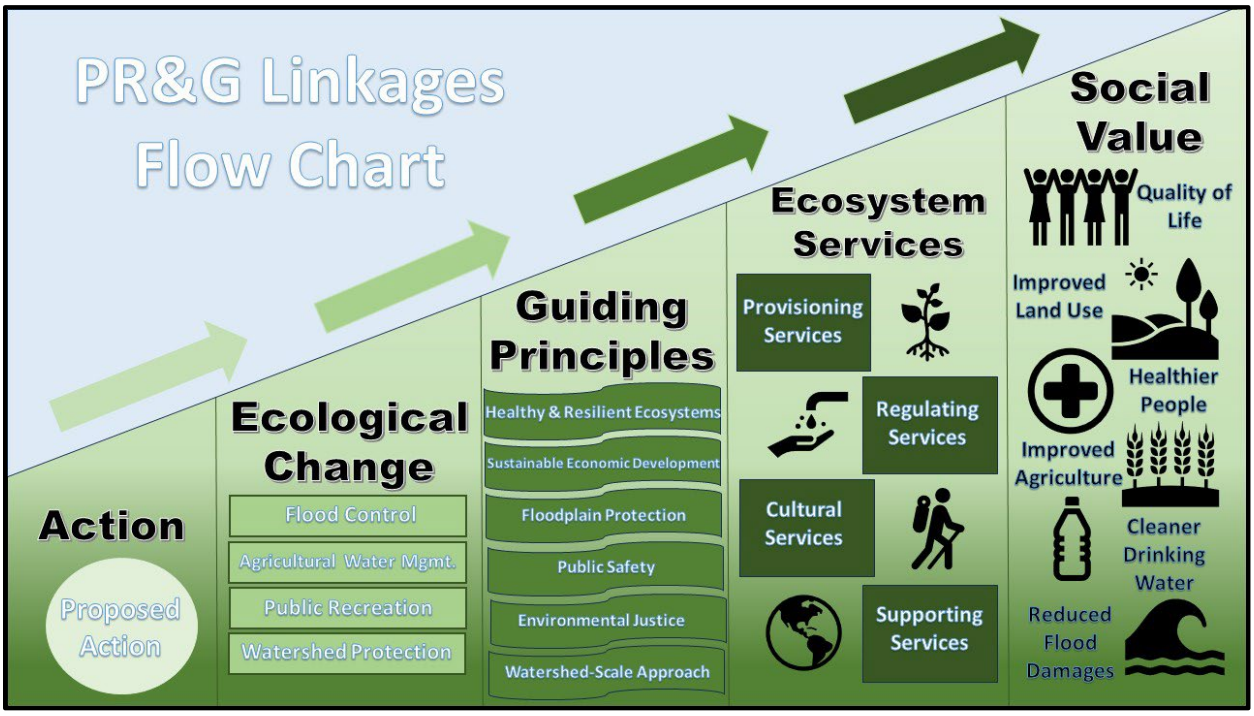

Figure 4-1: NRCS PR&G Process Flow Chart

4.1.1 Guiding Principles & Alternatives Required to be Developed

Alternatives were developed in accordance with the PL 83-566 program guidelines to address the purpose and need and the following guiding principles of the PR&G (DM 9500-013 pg. 21):

- **Healthy and Resilient Ecosystems:** A primary objective is to identify alternatives that will protect and restore ecosystem functionality by avoiding, minimizing, and then, and only then, mitigating any unavoidable damages.
- **Sustainable Economic Development:** The PR&G promotes the formulation of alternatives that consider the quantity and quality of water for both present and future generations as part of a larger economic evaluation.
- **Floodplains:** Alternatives should be developed that avoid the unwise use of floodplains and adverse impacts to flood prone areas.
- **Public Safety:** An objective of the PR&G is to reduce the risks to people and the improvement of public safety through formulated alternatives.
- **Watershed Approach:** This approach recognizes that there may be impacts both upstream and downstream of the project area and the applicable political or administrative boundaries.

The PR&G mandates that a wide range of alternatives be developed including a Future Without Federal Investment (FWOFI) Alternative, a Nonstructural Alternative (required to be carried into the final array of plans for Rehabilitation projects), a Locally Preferred Alternative, and an Environmentally Preferred Alternative (from NEPA). Furthermore, the alternative that is identified to have the greatest Benefit-Cost Ratio (BCR) during economic analysis will be identified as the National Economic Efficiency (NEE) Alternative. More detailed descriptions of these required alternatives are provided below:

- **No Action/Future Without Federal Investment (FWOFI) Alternative:** This alternative serves as the No Action Alternative under NEPA and represents the analytical baseline against which all other alternatives are compared and evaluated. All watershed rehabilitation plans will include the No Action/FWOFI alternative. It is also required by NEPA.
- **Structural Alternative:** These are alternatives which would incorporate structural improvements to address the problems in the watershed. They can include a variety of measures and their development and implementation, if selected, will be cost-shared according to their eligibility and purpose under PL 83-566. These alternatives are screened against various NEPA and PR&G criteria.
- **Nonstructural Alternative:** These alternatives alter the use of existing infrastructure or human activities to avoid or minimize adverse changes to existing hydrologic, geomorphic, and ecological processes. They can include modifications to public policy, regulatory policy, management practices, floodproofing, property relocations/buyouts, or the use of green infrastructure. For PL-566 projects with a Flood Prevention or Dam Rehabilitation authorized purpose, a nonstructural alternative is required to be carried forward into the final array of alternatives.
- **Locally Preferred Alternative:** This alternative is developed in cooperation with SLOs and local interests that have oversight or implementation authorities and responsibilities.
- **Environmentally Preferred Alternative (from NEPA):** The environmentally preferred alternative is required to be identified under the NEPA process. If it is expected that a Clean

Water Act (CWA) Section 404 permit (potential impacts to wetlands or WOTUS) would be required, the principles of the USACE's Least Environmentally Practicable Alternative, or LEDPA, are required to be utilized. These principles include first avoidance of impacts, second minimization of impacts, and then, and only then, mitigation of adverse impacts.

- **National Economic Efficiency (NEE) Alternative:** This alternative will be identified based on which of the plans in the final array of alternatives has the highest Benefit-Cost Ratio (BCR) after undergoing an incremental economic analysis under the PR&G. The alternative identified as the NEE should have a BCR higher than 1.0 in order to be an economically defensible plan under the PR&G.

4.1.2 Alternative Formulation Criteria

The SLOs, NRCS, and agency/public stakeholders adhered to the following alternative plan formulation process that included the following phases:

- **Phase I:** Identification of deficiencies resulting from the project problems.
- **Phase II:** Formulation of potentially suitable management measures to address each identified deficiency and qualitative screening of their eligibility and feasibility for inclusion in an alternative plan.
- **Phase III:** Evaluation of pairwise compatibility for each selected measure against one another to form a viable alternative that addresses all problems, opportunities, and the purpose and need.
- **Phase IV:** Combination of the remaining measures into an initial array of alternative plans.
- **Phase V:** First screening of the initial array against the Federal Objective, project objectives, and planning constraints of the PR&G.
- **Phase VI:** Second screening of the initial array against the ecosystem services and the Benefit-Cost Analysis (BCA).
- **Phase VII:** Presentation of the final array of alternative plans and screening of the alternatives against environmental resource concerns (NEPA) and the PR&G criteria of completeness, effectiveness, efficiency, and acceptability (CEEA) to identify the Preferred Alternative.

The PR&G CEEA criteria were used as targets during the screening of the initial array of plans but were not utilized as formal screening criteria until after the final array of alternative plans was established. The CEEA criteria were used, in combination with comparison of alternatives against the environmental resource concerns, as the basis for selecting the Preferred Alternative, detailed in chapter 6 of this Plan-EA.

4.1.3 Risk and Uncertainty

As described in NWPM 501.42(B)(1)(b), risk and uncertainty are inherent in the watershed planning process. Risk refers to those outcomes that can be described using well-known probability distributions and uncertainty refers to potential outcomes that cannot be described in objectively known probability distributions. Risk and uncertainty are inherent as they originate from the underlying variability of complex natural, social, and economic conditions.

Although it can be predicted that extreme weather events, including drought and floods, will increase over time, the exact frequency and intensity of these events cannot be known. Depending on actual future conditions, the project/alternatives may be less effective at solving the identified

problems as initially anticipated. Other risk/uncertainty factors for this project include sedimentation, water demand, and development in the area.

4.1.4 Formulation Process

This subsection presents the formulation of alternatives in more detail, drawing upon the results of the seven-phase formulation criteria plan presented in section 4.1.2 above. The full alternative formulation and screening process is documented in the Alternative Formulation and Screening Matrix located in Appendix E. The alternatives selected and eliminated from detailed study will be discussed in the following sections.

4.1.4.1 Phase I: Identification of Deficiencies

The SLOs and other project stakeholders identified locations in the project area that experience issues associated with the project problems. From these identified locations in the study area, a set of ten deficiencies were identified. The identified deficiencies are:

Table 4-1: Identified Deficiencies

No.	Deficiency Description
1	Principal Spillway Undersized and Degraded Condition
2	Auxiliary Spillway Undersized/Insufficient Freeboard and Structural Failure
3	Inadequate Crest Width
4	Uncontrolled Seepage Around Principal Spillway Outlet Conduit
5	Uncontrolled Seepage and High Groundwater at Toe of the Dam
6	Current Permanent Detention of Water vs. Original Design Criteria Assuming Short Periods of Water Detention
7	Unknown Dam Zone Compatibility
8	Decreased Sediment and Storage Capacity
9	Seismic and Static Stability of the Dam Not Meeting Current Dam Safety Standards
10	Nonstructural Solutions to Problems at Utaba Dam

4.1.4.2 Phase II: Formulation of Potentially Suitable Management Measures

This phase identified potential management measures for each of the deficiencies identified in Phase I and qualitatively evaluated them for their suitability and eligibility as a potential component of a fully fleshed out alternative plan. Certain measures were eliminated based on a variety of factors which are discussed in detail in section 4.3. A total of 15 potential measures were carried forward for Phase III. The qualitative evaluation of all considered measures is documented in the Alternative Formulation and Screening Matrix in Appendix E.

4.1.4.3 Phase III: Pairwise Compatibility of Each Measure

In Phase III, each of the 15 potential management measures were screened against one another for pairwise compatibility to be combined into a full alternative plan. This included identifying measures that were mutually exclusive or infeasible when combined with other potential measures. This process required the combination of enough measures to address each of the identified problems and opportunities and to meet the NEPA purpose and need of the project. The majority

of management measures considered were compatible with one another. However, certain measures (i.e., nonstructural measures) were only compatible with a particular set of measures and so warranted carrying forward as a separate alternative plan. The full pairwise compatibility assessment is located in the Alternative Formulation and Screening Matrix in Appendix E.

4.1.4.4 Phase IV: Combination of Measures into Initial Array of Alternatives

This phase took each of the combinations of management measures that were identified as being compatible with one another in Phase III and identified a set of potential alternative plans known as the initial array of alternatives under the PR&G. In theory, each of these alternatives should potentially address the identified problems and opportunities and meet the NEPA purpose and need. The initial array of plans is listed in the table below:

4.1.4.5 Phase V: First Screening of the Initial Array

Phase V included the first screening of the initial array of alternative plans against the following qualitative criteria:

A. The Federal Objective (see section 2.1.1)
B. The Project Objectives (See section 2.1.2)
C. The Planning Constraints (See section 2.1.3)

This screening was also qualitative and assessed the ability of each plan to meet the objectives and adhere to the avoidance and minimization criteria of the planning constraints. The full screening is described in greater detail in Appendix E. The results of the first screening are shown in the table below.

Table 4-2: Results of First Screening of the Initial Array of Alternatives

Alternative	Carried Forward?	Rationale
No Action/FWOFI	Yes	The No Action/FWOFI Alternative is required to be carried into the final array of alternatives by NEPA and PR&G. Carried forward to the second screening of the initial array.
Structural Rehabilitation	Yes	The Structural Rehabilitation Alternative meets all five planning objectives and addresses all six planning constraints, making it the best performing alternative in the initial array under this first screening. Carried forward to the second screening of the initial array.
Decommissioning	Yes	The Decommissioning Alternative meets four of five planning objectives and three of the six planning constraints, making it the second best performing alternative in the initial array under this first screening. Carried forward to the second screening of the initial array.
Floodproofing	Yes	The Floodproofing Alternative meets only two of five planning objectives and two of six planning constraints, making it the third best performing. Carried forward.
Relocations/Buyouts	No	The Relocations/Buyouts Alternative only meets two of five objectives and one of six constraints, making it the

Alternative	Carried Forward?	Rationale
		worst performing alternative in the initial array. Not carried forward.

4.1.4.6 Phase VI: Second Screening of the Initial Array

This phase included the second screening of the initial array of plans against the following qualitative and quantitative criteria:

A. Provision of the Four Ecosystem Service Categories (Qualitative)
B. The Benefit-Cost Analysis (BCA) and Net Economic Benefits (Quantitative)

This screening assessed the ability of each of the alternatives to meet and/or improve the provision of each ecosystem service category in the watershed and meet the minimum BCR of 1.0 or higher. The full screening is described in greater detail in Appendix E. The results of the second screening are shown in the table below:

Table 4-3: Results of the Second Screening of the Initial Array of Alternatives

Alternative	Carried Forward?	Rationale
No Action/FWOFI	Yes	The No Action/FWOFI Alternative is required to be included in the final array under NEPA and PR&G. Carried forward into the final array of alternatives.
Structural Rehabilitation	Yes	The Structural Rehabilitation Alternative maintained or improved all provisioning and regulating services in the project area and improved or maintained three of four cultural services. This project would have a BCR of 3.47. Carried forward into the final array of alternatives.
Decommissioning	Yes	The Decommissioning Alternative maintained or improved all provisioning and regulating services in the project area but only improved/maintained one of the four cultural services. This project would have BCR of 4.30. Carried forward into the final array of alternatives.
Floodproofing	No	The Floodproofing Alternative only improved or maintained one of three provisioning services and one of four cultural services in the project area. Both of the regulating services in the project area would be improved/maintained. Not carried forward.

4.1.4.7 Phase VII: Presentation of the Final Array of Alternative Plans

The final array of alternative plans was identified based on the results of the two screening processes conducted in phases V and VI. During this phase, the PR&G screening criteria of CEEA were addressed to be used in combination with the environmental resource concern screening of

chapter 5 to identify the Preferred Alternative. Furthermore, the Environmentally Preferred, Locally Preferred, and NEE plans were identified in this phase.

4.2 Alternatives Considered

The following alternatives were brought forward into the final array of plans for detailed analysis. The individual management measures included under each alternative plan are described in this section.

4.2.1 Alternative 1 – No Action – Future Without Federal Investment (FWOFI) Alternative

Taking no action would consist of activities carried out if no federal action or funding were provided. This alternative would not address the deficiencies at Utaba Dam. There would be no improvements made to the current condition of the principal and auxiliary spillways, the inadequate crest width of the dam, or the uncontrolled seepage issues that exist at the outlet conduit of the principal spillway and at the toe of the dam. Furthermore, soil migration would continue to occur, and sediment would continue to accumulate, with no storage capacity being restored. Seismic and static stability of the dam would remain unknown, and the risk of a breach would grow more likely over time. Under this alternative, it is reasonable to assume that a breach would become imminent via the most probable failure mode (structural failure of the auxiliary spillway). The current average annual floodwater damages with the dam are $1,069,987. These damages would be incurred on structures ($1,003,809), roads/crossings ($46,679), and as a result of sediment ($19,500).

The No Action/FWOFI Alternative would not meet the project's purpose and need and would not solve the problems or meet the opportunities identified in chapter 1 as the existing facility would continue to degrade and remain out of compliance with NRCS and Utah Dam Safety standards. This alternative would not meet the Federal Objective to protect the environment and promote sustainable economic development. Additionally, the No Action/FWOFI Alternative would not successfully meet the PR&G Guiding Principles of Healthy and Resilient Ecosystems, Sustainable Economic Development, Floodplains, Public Safety, or Watershed Approach.

The No Action/FWOFI Alternative will serve as the analytical baseline throughout the remainder of this Watershed Plan-EA against which the other alternatives included in the final array may be compared against (along with each other).

4.2.2 Alternative 2 – Proposed Action – Structural Rehabilitation Alternative

The Structural Rehabilitation Alternative would upgrade Utaba Dam to meet Utah State and NRCS Dam Safety standards while maintaining water detention capacity. The dam would be raised 4 feet to provide additional freeboard for the Probable Maximum Flood (PMF) event. The undersized and degraded principal spillway would be replaced, and the auxiliary spillway would be relocated to the left abutment. A downstream filter and drain system would address seepage issues, and a new principal spillway would prevent blockages from beaver activity while allowing full reservoir drainage. A chimney and blanket filter system would be installed to prevent soil migration. Sediment management measures include removing accumulated sediment and reducing sediment buildup by upgrading the principal spillway. To meet safety standards, modifications could include flattening slopes, adding a stability berm, or replacing weak dam material. A control gate on the principal spillway would allow water release to be restricted, enabling the reservoir to serve as a

wildfire suppression resource as well as facilitate inspection of the principal spillway conduit. The following management measures are included in the Structural Rehabilitation Alternative:

4.2.2.1 Principal & Auxiliary Spillways

ABANDON & REPLACE PRINCIPAL SPILLWAY

This measure would abandon the existing principal spillway (5,703.4 feet) and low-level outlet (5,654.4 feet) and replace it with a new spillway (5,705.0 feet) and low-level outlet (5,690.0 feet). The new principal spillway would be designed to meet all standards and needs. This measure would require less of the existing dam and accumulated sediment to be removed but would still require a significant portion of the dam and some sediment to be removed. Any removed sediment would be disposed of by placing it in the borrow area at North Fork Park (the same place that the dam material came from when originally constructed). This measure alone may not address the uncontrolled seepage that currently occurs around the outside of the current spillway conduit, which is addressed in another measure using a downstream filter and drain system.

REPLACE AUXILIARY SPILLWAY – LEFT ABUTMENT

In this measure, the entire existing auxiliary spillway would be completely replaced, and a new auxiliary spillway structure would be installed on the left abutment of the dam. The purpose of relocating the auxiliary spillway, besides updating the spillway to meet current dam safety standards, would be to reduce the risk of a structural failure of the dam. Current dam safety standards would require the new auxiliary spillway to provide a significant amount of additional freeboard and to pass the largest required storm event (the PMF).

REHABILITATE SPILLWAYS TO PREVENT LONG-TERM WATER STORAGE

Utaba Reservoir is not currently able to completely drain following flood events due to woody debris blockages at the principal spillway. These blockages are a result of regular beaver (*Castor canadensis*) activity near the site. In this measure, the new principal spillway would be designed so that it could not be choked by woody debris generated from beaver activity. Doing this will allow the reservoir to be fully drained after flood events and would require the rehabilitation to be completed with less stringent standards for a flood control dam.

4.2.2.2 Crest Width of the Dam

WIDEN CREST BY ADDING MATERIAL DOWNSTREAM TO COMPLY WITH SAFETY STANDARDS

To meet current dam safety standards, the crest width of the dam needs to be widened. This measure would accomplish this by adding material to the downstream (and possibly upstream) slope of the dam, which would allow the crest to be widened to meet safety standards. Stability standards would likely also require additional downstream material to be used and would allow the installation of a filter and drain system. The crest would be widened from 14-feet to 22-feet wide.

4.2.2.3 Seepage Control

ADDRESS SEEPAGE AT PRINCIPAL SPILLWAY OUTLET CONDUIT WITH FILTER & DRAIN SYSTEM

Uncontrolled seepage around the outlet conduit of the principal spillway would be addressed through the installation of a filter and drain system. This system would be designed to meet filter criteria for the embankment and native materials. The system would allow the seepage to be collected and measured while preventing migration of embankment or of native soils. The system would eliminate the risks and concerns associated with the seepage. Seepage would be collected

by the filter and drain system, be measured, and then would be discharged to the creek downstream of the dam.

ADDRESS SEEPAGE & HIGH GROUNDWATER AT TOE OF DAM WITH FILTER & DRAIN SYSTEM

Uncontrolled seepage and high groundwater conditions at the toe of the dam would be addressed through the installation of a downstream chimney and blanket filter and drain system. The system would be designed to meet filter criteria for the embankment and native materials. The system would allow the seepage to be collected and measured while preventing migration of the embankment or of native soils. The system would eliminate the risks and concerns associated with the seepage itself. Seepage would be collected by the filter and drain system, be measured, and then would be discharged to the creek downstream of the dam.

4.2.2.4 Prevention of Soil Migration

INSTALL CHIMNEY & BLANKET FILTER & DRAIN SYSTEM

Migration of incompatible soil particles from an upstream zone into downstream soils can cause voids to be created. These voids have the potential to result in the failure of the dam. To prevent the migration of soil particles at Utaba Dam, this measure would install a chimney and blanket filter and drain system that would prevent voids from propagating until they reach the surface. The system would be designed to meet filter criteria for the embankment and native materials.

4.2.2.5 Sediment Storage Management

REHABILITATE PRINCIPAL SPILLWAY TO REDUCE RATE OF SEDIMENT ACCUMULATION

This measure would address the management of sediment storage in the reservoir without directly restoring lost sediment storage capacity. This measure would reduce the rate at which sediment accumulates and would prolong the life of the facility for an additional 50-years. The new principal spillway would be configured to allow most of the flow and entrained sediment to continue to pass through the reservoir without detention. This would reduce the sediment accumulation rate in the reservoir. Coarse materials like sands, gravels, and cobbles would continue to settle out and accumulate in the reservoir, but the finer grained sediment would remain entrained in the water and continue downstream before settling out.

REMOVE ACCUMULATED SEDIMENT

This measure would remove accumulated sediment in the dam to restore some or all of the original sediment storage capacity. The facility was designed to include 137 acre-feet of total storage capacity. 90 acre-feet of this capacity was allocated for sediment accumulation. Currently, about 33 acre-feet of sediment has accumulated in the reservoir (Genterra Consultants, 2020). Removal of the sediment would require dewatering of the sediment and hauling it to a designated disposal site. Removal of the sediment would restore storage capacity and would improve the effectiveness of the structure at reducing peak flood flows. Sediment removal is very difficult and expensive.

4.2.2.6 Seismic and Static Stability of the Dam

ADDITIONAL IMPROVEMENTS TO COMPLY WITH CURRENT DAM SAFETY STANDARDS

There could be additional improvements that would need to be made at the site to ensure the rehabilitated structure complies with all state and federal dam safety standards. These improvements are included in the alternative analysis but would only be implemented if necessary. Although the 30% design does not indicate that these measures will ultimately be necessary, resource impact analyses have been performed conservatively to account for the possibility of these additional improvements being necessary should they be found to be needed during final

design of the project. It is unlikely that improvements would extend beyond what is already known to be necessary to address other deficiencies. However, additional improvements could include flattening upstream and downstream slopes, constructing a stability berm at the upstream and/or downstream toe of the dam, removing a portion of the dam and replacing it with better material, and/or adding a filter and drain system to remove seepage for improvement of strength and stability of downstream materials.

4.2.2.7 Fire Suppression Resource

INSTALL CONTROL GATE TO DETAIN WATER FOR WILDFIRE SUPPRESSION

An additional management measure that would be implemented under this alternative would be to create the ability for the Utaba Reservoir to serve as a fire suppression resource should a wildfire be in the area. This would require the new principal spillway to be reconfigured to include a gate that could be closed to detain water to be used for wildfire suppression. Wildland firefighters in the area have expressed interest in having a source of water to use to fight potential fires on the north end of the Ogden Valley. The current reservoir has no way to prevent discharge of water. To provide the reservoir with this capability, a control gate would be installed at the principal spillway, allowing the release of water to be restricted to fill the reservoir. A control gate would be added to the principal spillway to allow inspection of the spillway conduit independent of a desire for a water source for wildland fire suppression.

4.2.3 Alternative 3 – Proposed Action – Decommissioning Alternative

The PR&G requires at least one nonstructural alternative be evaluated in full detail for PL-566 REHAB projects such as this. Three nonstructural alternatives were evaluated in the initial array of alternative plans but only one was included in the final array as it was the only one that was deemed potentially feasible by the SLOs. This alternative recognizes that the potential failure of the existing dam without rehabilitation could create a greater risk to downstream properties and facilities than the benefits that are currently provided by the existing dam. The measures that would be included under this alternative would require the complete removal of the dam, removal and/or stabilization of accumulated sediment, reestablishment of channels through the reservoir area (a nature-based solution (NBS) to restore natural hydrology), and site restoration/revegetation (also an NBS). The disposal of the dam material and accumulated sediment represents a significant challenge associated with this alternative. Ultimately, the disposal of material and sediment would require the disturbance of additional areas which would need to be subsequently restored and revegetated. Although the Purpose and Need of the project would be met with a single measure (i.e., decommissioning) under this alternative, it would be costly and have substantial impacts as discussed in chapter 5. However, the option remains to implement this nonstructural alternative and decommission the existing dam.

4.2.4 Locally Preferred Alternative

Under the PR&G, it is required to identify an alternative plan that is locally preferred. This alternative was developed with the SLOs and local interests that have oversight or implementation authorities and responsibilities. In the case of this project, the locally preferred alternative is Alternative 2 – Proposed Action – Structural Rehabilitation Alternative because it would be the most cost-effective for the SLOs and received the most positive input and support from project stakeholders during scoping and during the Alternative Selection Meeting held on March 5, 2025.

4.2.5 Environmentally Preferred Alternative (from NEPA)

The PR&G process mandates that an environmentally preferred alternative be identified as a part of the planning process. Additionally, if a CWA Section 404 permit (any potential impacts to WOTUS) is required, the principles of the U.S. Army Corps of Engineers (USACE) Least Environmentally Damaging Practicable Alternative (LEDPA) should be followed and complied with during the development of alternative plans. LEDPA principles are best adhered to using the framework of first avoidance, then minimization, then mitigation. Alternative 2 – Proposed Action – Structural Rehabilitation Alternative is the environmentally preferable/LEDPA Alternative for this Plan-EA because it is the alternative which maximizes environmental benefits. The Structural Rehabilitation Alternative would have the least significant and adverse impacts to the environment of the three alternatives in the final array as evaluated in detail in chapter 5.

The Decommissioning Alternative, although nonstructural, would not constitute the environmentally preferred alternative as a result of the damages that would occur to riparian areas, wetlands/WOTUS, and suitable habitat for the Ute Ladies'-tresses and Western Yellow-billed Cuckoo. These impacts, discussed in greater detail in chapter 5, would be significantly greater under the Decommissioning Alternative than the Structural Rehabilitation Alternative.

4.2.6 National Economic Efficiency (NEE) Alternative

Under the PR&G, the NRCS must identify the federally assisted alternative plan with the greatest net benefits, otherwise known as the National Economic Efficiency (NEE) plan. The alternative selected as the NEE must also comply with the PL 83-566 program and be in accordance with the Guiding Principles of the PR&G. These principles incorporate selecting the alternative in the final array with the highest BCR. For this Plan-EA, the NEE Alternative is Alternative 2 – Structural Rehabilitation Alternative, which has a BCR of 3.47 and total net benefits of $635,699. Although the Decommissioning Alternative had a higher BCR, it did not have higher net benefits and would have significant environmental impacts if implemented (most significantly to aquatic resources/wetlands), making the Structural Rehabilitation Alternative the NEE. More details are available in chapter 6 of this Plan.

4.3 Alternatives Considered But Eliminated From Detailed Study

In the alternative formulation and screening process outlined in sections 4.1.2 and 4.1.4 of this Plan-EA, the elimination of individual management measures that either did not meet the NEPA Purpose and Need or address the PR&G problems and opportunities were eliminated and not carried forward for further consideration and incorporation into alternative plans.

Additionally, during the screening of the initial array of alternatives against the objectives, constraints, ecosystem services, and economic benefits, two alternative plans were eliminated from further consideration. Both the eliminated management measures and the eliminated alternative plans are discussed in this section, along with their reason for elimination.

4.3.1 Floodproofing Alternative

One of the two full alternative plans eliminated from the initial array during the screening process was the Floodproofing Alternative. Similar to the Decommissioning Alternative in that it is a nonstructural alternative that would address the purpose and need with a single management measure, the Floodproofing Alternative would involve identifying any structures that would be impacted by the failure (breach) of Utaba Dam during a flood event and would install

improvements to prevent damage of the structures. These floodproofing improvements could include berms, walls, levees, channel improvements, raising structures, rebuilding structures at higher elevations, enlarging culverts or bridges, and raising roads. Floodproofing structures immediately downstream of the dam, such as ones at Camp UTABA, would require a second dam or channel improvements that would eliminate the camp, which would be quite technically and socially difficult. Although this alternative did pass the first screening of the initial array of alternatives against the planning objectives and constraints, it did not pass the second screening of the initial array of alternatives against the ecosystem services framework and benefit-cost analysis. The delivery of ecosystem services benefits would be significantly degraded from their current condition if this alternative were implemented, and the alternative has a BCR of less than 1.0. Additionally, the floodproofing changes would likely not be supported by the affected landowners and SLOs. For these reasons, the Floodproofing Alternative was eliminated from detailed study and was not included in the final array of alternative Plans.

4.3.2 Relocations/Property Buyouts Alternative

This alternative was included in the initial array of alternatives as a potential nonstructural solution to the problem and to address the purpose and need through a single nonstructural solution, similar to the Decommissioning and Floodproofing Alternatives. The alternative would identify all properties and structures that would be impacted by a failure (breach) of the dam during a flood event. The properties and structures impacted would be purchased. This alternative also considered the option of relocating structures to areas located outside of the breach floodplain. Because this option would likely include exorbitant costs that would make it difficult to justify if moved into the economic analysis, and where there were two less expensive and more feasible nonstructural options to consider, this alternative was not widely supported. The alternative did not pass the first screening of the initial array of alternatives against the planning objectives and constraints and so, was eliminated from detailed study and not included in the final array of alternatives.

4.3.3 Individual Management Measures Eliminated

At various phases of the alternative formulation and screening process (Appendix D and Appendix E), management measures that were initially considered for their benefit to the project area were ultimately eliminated for various reasons as described in this section. While these measures do not constitute entire alternative plans that would fulfill the purpose and need or address all the problems and opportunities on their own, they were considered at some point during the formulation/screening process as components which could potentially be included as a part of a larger alternative plan.

4.3.3.1 Remove and Replace Principal Spillway

This measure would remove and replace the existing principal spillway with a larger principal spillway that would comply with all applicable dam safety standards. This would require the removal and replacement of nearly the entire existing dam and the removal or stabilization of a significant portion of the accumulated sediment for construction to occur. This measure would address the uncontrolled seepage observed around the outside of the principal spillway conduit and would address the degraded condition of the principal spillway concrete. This measure was eliminated due to the exorbitant costs in comparison to all other potential measures without a justifiable benefit for the higher costs.

4.3.3.2 Rehabilitate Principal Spillway and Build New Principal Spillway

This measure would rehabilitate the existing principal spillway and construct a new principal spillway at a higher elevation to address capacity issues. This measure would still require removal of a significant portion of the dam to install a new spillway. Depending on the rehabilitation methods chosen and the location of the new spillway, significant sediment removal may still be necessary. The spillway rehabilitation methods would most likely reduce the capacity of the existing spillway and would not allow upstream control of water releases from the existing principal spillway. This measure was eliminated because the sponsors sought solutions that would have the ability to control water releases to allow for the reservoir to be used as a fire suppression resource. This measure would not provide that control and would not address the problems and opportunities or meet the purpose and need in a more cost-effective way than other measures considered.

4.3.3.3 Rehabilitate Principal Spillway and Request NRCS Variance

This measure would rehabilitate the existing principal spillway but also request a variance from the NRCS for the undersized conduit. This measure would require far less excavation than other considered measures and would not require sediment removal, depending on the chosen rehabilitation methods. The principal spillway would likely have less capacity and the ability of the dam and reservoir to control floods would be diminished. Obtaining a variance from NRCS for the undersized conduit would be difficult because it would require several dam safety standards to essentially be ignored. The purpose of the project is to meet dam safety standards, which would not be accomplished by this measure. For this reason, this measure was eliminated.

4.3.3.4 Replace Tower Portion of Principal Spillway and Rehabilitate the Conduit

This measure would replace the tower portion of the principal spillway with a structure that would allow some control of the water being released. The conduit would also be rehabilitated. This measure would require the removal or stabilization of a significant portion of the accumulated sediment to allow construction of a replacement inlet structure. Additionally, the uncontrolled seepage issues around the outside of the principal spillway conduit would not be addressed by this measure. The degraded condition of the principal spillway's conduit would be addressed by this measure. An upstream control gate to allow the detention of water for fire suppression would be compatible with this measure. However, the principal spillway would still not meet dam safety standards and would require a variance, failing to meet the purpose and need of the project. For this reason, this measure was eliminated.

4.3.3.5 Rehabilitate the Auxiliary Spillway & Add a Second Auxiliary Spillway

This measure evaluated adding another spillway to obtain the necessary capacity to pass the PMF storm event and rehabilitate the existing auxiliary spillway as well. The concrete of the current auxiliary spillway is in such poor condition that the concrete would need to be overlaid or replaced to obtain the necessary structural strength for this measure. This would reduce the capacity of the auxiliary spillway. A second auxiliary spillway would be needed in order to pass the largest required storm event without raising the dam's height. Utah Dam Safety indicated that they do not want to see a spillway located in the middle of the dam (as under current conditions) due to the increased risk of a breach/failure should the spillway fail. This measure would have a larger impact on Camp UTABA than putting the spillway on the left abutment, would have a larger area of impact, and would require additional excavation than if the spillway were placed only on the left abutment. For these reasons, this measure was eliminated.

4.3.3.6 Replace Existing Auxiliary Spillway – Right Abutment

In this measure, the entire existing auxiliary spillway would be completely replaced, and a new auxiliary spillway structure would be installed on the right abutment of the dam. The purpose of relocating the auxiliary spillway, besides updating the spillway to meet current dam safety standards, would be to reduce the risk of a structural failure at the dam. Current dam safety standards would require the new auxiliary spillway to provide a significant amount of additional freeboard and to pass the largest required storm event (the PMF). However, replacing the auxiliary spillway on the right abutment would hinder future access for operation and maintenance (O&M) and would require a much greater volume of soil to be moved. Furthermore, the left abutment would allow for a shorter spillway, which would be more cost effective. Lastly, the impacts to Camp UTABA would be significantly lower for an auxiliary spillway constructed on the left abutment rather than the right. For these reasons, this measure was eliminated from detailed consideration.

4.3.3.7 Request Variance to Dam Safety Standards to Allow a Narrower Minimum Crest Width

This measure would request a variance from both NRCS and Utah Dam Safety standards to be allowed a narrower minimum crest width without adding additional freeboard. The current crest width is about 8 feet less than minimum dam safety standards. This is a significant deviation from the standards. A variance would be requested under this measure for any crest width less than the minimum of 22 feet. This measure will not be carried forward since it would require a significant variance from dam safety standards, which have been established to protect public safety. This measure was eliminated due to its inability to meet the purpose and need to bring Utaba Dam into compliance with NRCS and Utah State Dam Safety standards.

4.3.3.8 Widen Crest by Adding a Wall on the Downstream Side

This measure would construct a wall on the downstream slope to allow the crest to be widened without adding material to the entire downstream slope. Using a wall to obtain the minimum crest width without adding material on the entire downstream slope would significantly reduce the costs and materials needed to widen the crest. However, this measure would not address the purpose of the standard and would not be in the best interest of public safety, one of the Guiding Principles of the PR&G. For this reason, this measure was eliminated.

4.3.3.9 Replace the Existing Principal Spillway

This measure would require the complete removal of the current dam and significant amounts of accumulated sediment to obtain access to the existing conduit. Installing a new and larger conduit would address the flow capacity deficiency. The new conduit would be installed using current dam construction standards to minimize seepage. While this would prevent seepage along the conduit, it would not address foundation seepage. A filter and drain system would be required as a separate measure and independent of the principal spillway conduit seepage. This measure was eliminated because it did not mitigate the need for a filter and drain system and would be much less cost-effective than the filter and drain system, which would address the deficiencies more efficiently.

4.3.3.10 Use High Pressure Grout to Seal Principal Spillway Seepage Pathways

A common method used to address seepage in abutments that can't be controlled using a filter and drain system is the use of high pressure grout to seal the voids or fractures which convey the seepage. The method can have success in fractured rock, but is less successful in soils or weathered bedrock, both of which are present in the project area. This measure considered drilling around the principal spillway conduit and injecting high pressure grout to seal leakage pathways. The high pressures that would be necessary to fill the voids have the potential to collapse the conduit

altogether. High pressure grouting, even when it is successful, does not stop all seepage, so a filter and drain system would still be required as an independent management measure. This measure was eliminated due to its inability to eliminate the need for a filter and drain system and its cost inefficiency in comparison to other considered management measures that would address problems and opportunities to an equal degree.

4.3.3.11 Abandon and Replace Existing Principal Spillway at a Higher Elevation

This measure would abandon the existing principal spillway by sealing the conduit with low viscosity grout and would replace the existing principal spillway at a higher elevation. The low viscosity grout would flow out of the conduit through failed joints or openings to fill the adjacent void. If there are no failed joints or openings, there would be no impact of this measure on the seepage. Openings in the conduit could be created prior to grouting, but filling of any seepage pathways would only occur near the conduit. A filter and drain system would still be required to control the seepage. Abandoning the principal spillway is likely to occur in this manner, but it would not fully address the seepage deficiency. This measure was eliminated due to its inability to fully address the problem it was considered to address.

4.3.3.12 Use High Pressure Grout to Seal Dam Toe Seepage Pathways

A common method used to address seepage in abutments that can't be controlled using a filter and drain system is the use of high pressure grout to seal the voids or fractures which convey the seepage. The method can have success in fractured rock, but is less successful in soils or weathered bedrock, both of which are present in the project area. This measure considered drilling around the principal spillway conduit and injecting high pressure grout to seal leakage pathways. The high pressures that would be necessary to fill the voids have the potential to collapse the conduit altogether. High pressure grouting, even when it is successful, does not stop all seepage, so a filter and drain system would still be required as an independent management measure. This measure was eliminated due to its inability to eliminate the need for a filter and drain system and its cost inefficiency in comparison to other considered management measures that would address problems and opportunities to an equal degree.

4.3.3.13 Install a Cutoff Trench Under the Core of the Dam

This measure would install a cutoff trench underneath the dam to prevent and/or reduce seepage through the foundation soils and weathered and competent bedrock. The cutoff wall would be installed underneath the impervious core of the dam to effectively reduce foundation seepage rather than forcing seepage to the surface or into the downstream dam materials. Installation of the cutoff trench below the core of the dam would require the removal of a significant portion of the dam itself. The wall would reduce the foundation seepage but would be unlikely to prevent the need for a chimney and blanket filter and drain system. This measure was eliminated because it did not remove the need for a filter and drain system and therefore would not provide the most cost-effective solution of all the management measures considered.

4.3.3.14 Rehabilitate the Dam to Meet Dam Safety Standards for Water Storage

This measure would make improvements to the dam during rehabilitation so that it would meet standards for the long-term storage of water. Standards for water storage dams are more stringent than for strictly flood control dams that do not store water. To allow long-term storage improvements, flattening upstream and downstream slopes may be necessary. A storage right would also be required to store water. This measure was eliminated because the SLO does not hold a storage right and does not have an interest in doing so because it would delay rehabilitation and would be costly to upgrade the dam for water storage.

4.3.3.15 Replace the Dam with a Dam that Meets Dam Safety Standards for Water Storage

The current dam would be completely replaced with a new, dam safety standard compliant dam under this alternative that would also meet the standards for a water storage dam. This measure would involve the complete removal of the current dam and much of the accumulated sediment in the reservoir basin. The measure was eliminated because the SLO does not hold a storage right and doesn't have an interest in doing so because it would delay rehabilitation and would be costly to upgrade the dam for water storage.

4.3.3.16 Raise the Dam – Sediment Storage Capacity

It is commonly less expensive to raise a dam to restore lost capacity than to remove accumulated sediment. In this measure, the dam and spillways would be raised to increase storage capacity. The amount of storage capacity that could be restored is limited by the topography of the project area. The materials needed to raise a dam can increase dramatically depending on conditions at the abutments. In the project area, the amount of material that would be needed to raise the dam increases very dramatically beyond a raise of 6 feet. Additional freeboard would also be needed in order to pass the PMF and to comply with dam safety standards. These additional requirements limit the ability to raise the dam for additional storage. Furthermore, this measure would present the possibility of destroying significant areas of wetlands and potentially suitable habitat for federally protected species. These impacts would require very expensive mitigation to offset. For these reasons, this measure was eliminated.

4.3.3.17 Replace the Dam – Incompatible Zone Materials

Under this measure, the entire dam would be replaced with an embankment with materials that are compatible and meet dam safety standards. The current dam would be removed so it could be replaced with a dam constructed of zones that are compatible and meet filter criteria. This measure was eliminated because other measures (i.e., installation of a filter and drain system) would address the problems more efficiently and in a more cost-effective manner.

4.3.3.18 Replace the Dam – Dam Stability

To ensure compliance with current dam safety standards, this measure would completely remove and replace the existing dam with a new dam that would be designed and constructed to comply with current dam safety standards. It is likely that any seismic or stability issues could be addressed with methods that are far less impactful than the complete removal of the dam. Complete removal would also require removal of a large portion of the accumulated sediment and the associated impacts. This measure was eliminated due to significant environmental impacts and exorbitant costs in comparison to the other measures considered.

4.3.3.19 Change Purpose of the Dam to Water Storage

Water storage is a valuable commodity, and so using the dam for water storage was considered. The dam is currently classified as a flood control structure. Design standards are more stringent for water storage dams than flood control dams. A storage right must be obtained for a water storage facility that is not required for a flood control structure. This measure was eliminated because the SLO does not hold a storage right and does not want to delay the project the necessary amount of time to obtain a storage right and change the classification of the dam. Furthermore, the high costs associated with changing the classification are another reason for eliminating this measure.

4.3.3.20 Use of Utaba Reservoir for Recreation

During scoping, the public expressed interest in adding recreation to the current flood control purpose of the facility. This would require permanent storage of water and improved public access.

This measure would receive significantly increased public use if this use classification were modified. The owners of the land on which the dam and reservoir are located (Camp UTABA and the Durfee Creek Homeowners Association (HOA)), have each expressed that they are not interested in adding recreation to the purpose of the facility because of the associated liability and cost of doing so. This measure was eliminated because the SLO does not hold the necessary storage right and owners of the land would not be supportive or cooperative of the measure.

4.4 Final Array of Alternatives

The final array of alternative plans, or the alternatives considered in section 4.2, are listed in tabular format below as described by NWPM 501.42(B)(4). The table also describes the ability of each alternative plan in the final array to meet the PR&G evaluation criteria of completeness, effectiveness, efficiency, and acceptability. Table cells that are shaded in **Green** indicate that the alternative met the specified criteria, table cells that are shaded in **Red** indicate that alternative did not meet the specified criteria.

Table 4-4: Summary of Alternatives Preliminary Screening Evaluation

	No Action/FWOFI (Analytic Baseline)	**Structural Rehabilitation**	**Decommissioning (Nonstructural)**
NEPA Purpose and Need	The purpose and need of the project would not be met by this alternative.	The purpose and need of the project would be met by this alternative.	The purpose and need of the project would be met by this alternative.
Contribution to Planning Objectives	**No Action/FWOFI (Analytic Baseline)**	**Structural Rehabilitation**	**Decommissioning (Nonstructural)**
Objective 1 – Dam Safety	The ability of Utaba Dam to meet Utah State and NRCS Dam Safety criteria would not be improved. Objective would not be met.	Under this alternative, structural improvements to the dam including replacing the principal/auxiliary spillways, raising the dam, and updating the crest width would bring Utaba Dam into compliance with Utah State and NRCS Dam Safety standards. Objective would be met.	Under this alternative, the dam would be decommissioned and removed, which would eliminate the need for any Utah State or NRCS Dam Safety criteria to be met. Objective would be met.
Objective 2 – Seismic Stability	Under the No Action/FWOFI Alternative, the seismic stability of the dam would not be addressed or improved. Objective would not be met.	Under this alternative, structural improvements to the dam would include measures to improve/address the seismic stability of the dam. Objective would be met.	Under this alternative, the decommissioning of the dam would eliminate the need to address seismic stability at the dam (there would be no dam). Objective would be met.

	No Action/FWOFI (Analytic Baseline)	Structural Rehabilitation	Decommissioning (Nonstructural)
Objective 3 – Breach/Flood Hazards	Recognized breach and flood hazards at Utaba Dam would persist under this alternative. The dam would eventually breach. Objective would not be met.	Under this alternative, recognized breach and flood hazards at Utaba Dam would be addressed through structural improvements. Objective would be met.	Under this alternative, the decommissioning of the dam would eliminate currently recognized breach and flood hazards. Objective would be met.
Objective 4 – Sedimentation Issues	The No Action/FWOFI Alternative would not address sedimentation issues or provide capacity through 2077 at Utaba Dam. Objective would not be met.	Under this alternative, sediment may be removed from the dam, creating additional capacity for sediment storage through 2077. Objective would be met.	Under this alternative, the decommissioning of the dam would eliminate the need to address sedimentation or create additional capacity for sediment. Objective would be met.
Objective 5 – Retarding Structure	The No Action/FWOFI Alternative would not address the deficiencies of the current floodwater retarding structure. Objective would not be met.	Under this alternative, the rehabilitated dam would provide a new and more effective floodwater retarding structure through 2077. Objective would be met.	Under this alternative, the removal of the dam would eliminate the floodwater retarding structure, leaving downstream properties at risk of significant flood damage. Objective not met.
Response to Planning Constraints	**No Action/FWOFI (Analytic Baseline)**	**Structural Rehabilitation**	**Decommissioning (Nonstructural)**
Constraint 1 – Special Status Species	The No Action/FWOFI plan would avoid/minimize impacts to ESA species to the maximum extent possible. Constraint would be met.	The Structural Rehabilitation Alternative would avoid/minimize impacts to ESA species to the maximum extent possible and would not result in “take” of any species or their habitats. Constraint would be met.	The Decommissioning Alternative would have adverse impacts on downstream habitat for WYBC as there would no longer be a floodwater retarding structure. Constraint would not be met.

	No Action/FWOFI (Analytic Baseline)	Structural Rehabilitation	Decommissioning (Nonstructural)
Constraint 2 – Cultural/Historic Sites	When a breach eventually occurred under this alternative, all historic properties located within the indirect APE would be adversely affected. Constraint would not be met.	This alternative would avoid effects to historic properties and cultural resources (other than the dam itself) to the maximum extent possible. Constraint would be met.	This alternative would avoid effects to historic properties and cultural resources (other than the dam itself) to the maximum extent possible. Constraint would be met.
Constraint 3 – Real Property	This alternative would avoid/minimize real property acquisition challenges. Constraint would be met.	This alternative would avoid/minimize real property acquisition challenges. Constraint would be met.	This alternative would avoid/minimize real property acquisition challenges. Constraint would be met.
Constraint 4 – Camp UTABA Impacts	The No Action/FWOFI Alternative would have adverse impacts on Camp UTABA and properties in the Durfee Creek HOA when the dam eventually breached. Constraint not met.	This alternative would have no adverse impacts on Camp UTABA or the Durfee Creek HOA and would actually make them both safer. Constraint would be met.	This alternative would leave Camp UTABA susceptible to damages from future flood events, causing there to be adverse effects. Constraint would not be met.
Constraint 5 – Recreational Facilities	The No Action/FWOFI Alternative would not change the existing recreational opportunities in the area. Constraint would be met.	This alternative would have no adverse impacts on the existing recreational opportunities in the project area. Constraint would be met.	This alternative would eliminate existing recreational facilities at North Fork Park and Camp UTABA. Constraint would not be met.
Constraint 6 – Funding	This alternative would not exceed the reasonable funding limits of the PL-566 program or the SLOs ability to provide cost-share. Constraint would be met.	This alternative would not exceed the reasonable funding limits of the PL-566 program or the SLOs ability to provide cost-share. Constraint would be met.	This alternative would not exceed the reasonable funding limits of the PL-566 program or the SLOs ability to provide cost-share. Constraint would be met.
Contribution to Ecosystem Services	**No Action/FWOFI (Analytic Baseline)**	**Structural Rehabilitation**	**Decommissioning (Nonstructural)**

	No Action/FWOFI (Analytic Baseline)	Structural Rehabilitation	Decommissioning (Nonstructural)
Provisioning Services	The No Action/FWOFI Alternative would negatively impact downstream water quality in Pineview Reservoir following a breach of the dam. Additionally, sediment washed downstream would also adversely impact fish populations. Overall provisioning services would be degraded under this alternative.	The Structural Rehabilitation Alternative would have no impacts on water quality, irrigation water for agriculture, or downstream fish populations. The provisioning services conditions would remain the same under this alternative.	The Decommissioning Alternative would have no impacts on water quality, irrigation water for agriculture, or downstream fish populations. The provisioning services conditions would remain the same under this alternative.
Regulating Services	The No Action/FWOFI Alternative would cause public safety to be endangered as a breach becomes more likely. Overall, regulating services would be degraded under this alternative	The measures included under this alternative would reduce the likelihood of a breach significantly and would allow the dam to be utilized as a fire suppression resource during a wildfire event. Overall, regulating services would be improved under this alternative.	The measures included under this alternative would eliminate the risks associated with a breach entirely. As the dam would be removed, there would be no change in the ability of the site to be used as a fire suppression resource. Overall, regulating services would be improved under this alternative although to a lesser extent than the Structural Rehabilitation Alternative.

	No Action/FWOFI (Analytic Baseline)	Structural Rehabilitation	Decommissioning (Nonstructural)
Cultural Services	This alternative would negatively impact Camp UTABA and other downstream youth camps when a breach eventually occurs. Aesthetic value would be degraded following a breach and existing habitat for the WYBC would be damaged or destroyed in a breach event. Overall, cultural services would be degraded under this alternative.	Camp UTABA and additional youth camps downstream would be protected by a structural rehabilitation which would make a breach significantly less likely than the current condition. No change would occur to aesthetic value or any WYBC habitat. There would be temporary negative impacts to North Fork Park, which would be used to relocate removed sediment and dam material, but it would be restored to its former condition following construction. Overall, the cultural services in the area would improve under this alternative.	There would be negative impacts to the aesthetic value of the area and to North Fork Park that would occur as a result of the Decommissioning Alternative. There would be adverse impacts to potentially suitable WYBC habitat as a result of flood risk. There would be no impact on the quality of Camp UTABA or the youth camps downstream. Overall, cultural services in the project area would be degraded under this alternative.
Supporting Services	Not Applicable. Evaluated as an Intermediate Ecosystem Service in this Plan-EA.	Not Applicable. Evaluated as an Intermediate Ecosystem Service in this Plan-EA.	Not Applicable. Evaluated as an Intermediate Ecosystem Service in this Plan-EA.
Results to Economic Analysis	**No Action/FWOFI (Analytic Baseline)**	**Structural Rehabilitation**	**Decommissioning (Nonstructural)**
Benefit-Cost Ratio	**0.0**	**3.47**	**4.30**
Net Project Benefits	**$0**	**$635,699**	**$629,167**
Response to Evaluation Criteria	**No Action/FWOFI (Analytic Baseline)**	**Structural Rehabilitation**	**Decommissioning (Nonstructural)**

	No Action/FWOFI (Analytic Baseline)	Structural Rehabilitation	Decommissioning (Nonstructural)
Completeness	The No Action/FWOFI Alternative would not constitute a complete solution as no problems would be addressed.	The Structural Rehab. Alternative would account for all necessary investments needed to achieve the planned effects and constitutes a complete alternative/solution.	The Decommissioning Alternative would account for all necessary investments needed to achieve the planned effects and constitutes a complete alternative/solution.
Effectiveness	This alternative would not constitute an effective solution as no problems would be solved, and no objectives would be met	This alternative would address all the identified problems and meet all of the opportunities. The alternative would stay within all the constraints and meet the objectives. Constitutes an effective solution.	Not all objectives and planning constraints would be adhered to under this plan. This alternative would not constitute an effective solution.
Efficiency	This alternative would not cost anything to implement and so would constitute a cost-efficient solution.	This alternative is also the NEE Alternative and has net positive economic benefits with a BCR of 3.47. This alternative would constitute a cost-efficient solution.	This alternative, although not as cost efficient as the Structural Rehab plan, would still have positive net economic benefits with a BCR of 4.30. Would constitute an efficient solution. Although the BCR is higher, the environmental impacts would be far greater under this alternative.
Acceptability	This alternative would not be acceptable or consistent with existing federal laws as it would not protect the environment and would not address any of the problems in the watershed.	This alternative would comply with all federal and state regulatory frameworks and is the Environmentally Preferred Alternative (from NEPA) and the Locally Preferred Alternative. The problems in the watershed would be addressed. This option constitutes an acceptable solution.	This alternative would comply with all federal and state regulatory frameworks. The problems in the watershed would be addressed. This option constitutes an acceptable solution.

5.0 Environmental Consequences: Evaluation of Alternatives

This chapter serves as an evaluation of the potential effects that each alternative may have on the various resources described in chapter 3 of this Final Plan-EA. While chapter 3 was representative of the existing conditions in the project area, this chapter serves to examine how those conditions may be altered, positively or negatively, by the action alternatives: the Structural Rehabilitation Alternative and the Decommissioning Alternative.

The NRCS has a responsibility under NEPA to identify and address potential effects on the environment that may result from implementation of the alternative plans. Additionally, under the PR&G, the NRCS is responsible for ensuring that the alternatives meet the principles and objectives of the program. This Plan-EA includes the No Action/FWOFI Alternative and two Proposed Action Alternatives. One of the Proposed Action Alternatives has been determined to be the Locally Preferred, Environmentally Preferred, and PR&G NEE Alternative for the project. This chapter describes the potential effects on the environmental resources due to construction of either Action Alternative within each resource category. The same organizational format as chapter 3 is followed for clarity and ease of comparison.

5.1 Summary and Comparison of Alternatives-Planning Process

Table 5-1 below compares how well the No Action/FWOFI Alternative, Structural Rehabilitation Alternative, and Decommissioning Alternative resolve the identified problems. Each alternative is evaluated in comparative form in substantial and equal detail.

Table 5-1: Summary and Comparison of Alternatives – Planning Process

	No Action/FWOFI (Analytic Baseline)	Structural Rehabilitation Alternative	Decommissioning Alternative (Nonstructural)
Dam Rehabilitation			
Deficiency 1 – Principal Spillway Undersized and Degraded	The No Action/FWOFI Alternative would not improve the principal spillway, which would remain degraded and undersized.	This alternative would address this deficiency by abandoning and replacing the current principal spillway with a new one at a higher elevation. The new spillway would meet all dam safety standards.	The Decommissioning Alternative would address this deficiency by completely removing the entire dam, including the principal spillway. This would constitute a nonstructural solution to this deficiency.
Deficiency 2 – Auxiliary Spillway Undersized and Insufficient Freeboard	The auxiliary spillway would not be improved under this alternative.	This alternative would replace the existing auxiliary spillway with a new one on the left abutment of the dam with capacity to pass the PMF.	This alternative would remove the current dam, including the auxiliary spillway, constituting a nonstructural solution to this deficiency.

	No Action/FWOFI (Analytic Baseline)	Structural Rehabilitation Alternative	Decommissioning Alternative (Nonstructural)
Deficiency 3 – Inadequate Crest Width	The No Action/FWOFI Alternative would not improve the crest width to meet federal or state dam safety standards.	The Structural Rehab. Alternative would address this deficiency by widening the crest width to comply with dam safety standards by adding material on the downstream slope. A variance may be requested from NRCS and Utah Dam Safety to allow a narrower minimum crest width with added freeboard if all other stability requirements are met during the design process.	The Decommissioning Alternative would address this deficiency by completely removing the dam, which would eliminate the need to update crest width as there would no longer be a dam in place. This would constitute a nonstructural solution to this deficiency.
Deficiency 4 – Uncontrolled Seepage Around Principal Spillway Outlet Conduit	This alternative would not address the uncontrolled seepage at the principal spillway outlet conduit. The dam would eventually breach.	This alternative would address the uncontrolled seepage around the principal spillway outlet conduit by installing a downstream filter and drain system that would meet filter criteria for embankment and native materials.	This alternative would address the uncontrolled seepage around the principal spillway outlet conduit by removing the dam, including the principal spillway outlet conduit, altogether. This would constitute a nonstructural solution.
Deficiency 5 – Uncontrolled Seepage and High GW at the Toe of the Dam	The No Action/FWOFI Alternative would not address the seepage and high groundwater issues at the toe of the dam. The dam would eventually fail under this plan.	The Structural Rehab. Alternative would address the seepage and high groundwater at the toe of the dam by installing a downstream chimney and blanket filter and drain system to safely allow the collection and measurement of seepage and prevent migration of soils.	The Decommissioning Alternative would address the seepage and high groundwater at the toe of the dam by completely removing the dam and the accumulated sediment. This would constitute a nonstructural solution to this deficiency.

	No Action/FWOFI (Analytic Baseline)	Structural Rehabilitation Alternative	Decommissioning Alternative (Nonstructural)
Deficiency 6 – Permanent Detention of Water vs. Original Design Criteria	This alternative would not address this deficiency as No Action or federal funding would be provided.	This alternative would rehabilitate the principal and auxiliary spillways to prevent long-term water storage and provide the means to completely drain the reservoir after flood events.	This alternative would eliminate the need to prevent the long-term storage of water or to drain the reservoir after flood events by decommissioning the entire dam, which would constitute a nonstructural solution to this deficiency.
Deficiency 7 – Unknown Dam Zone Compatibility	The dam zone compatibility would remain unknown under this alternative, as no funding would be provided.	This alternative would install a chimney and blanket filter and drain system to prevent the migration of soil particles, which can create voids which can propagate and cause failure.	This alternative would make the unknown dam zone compatibility negligible as the dam would be decommissioned, constituting a nonstructural solution to this deficiency.
Deficiency 8 – Decreased Sediment and Storage Capacity	The No Action/FWOFI Alternative would not address sediment accumulation or restore storage capacity for sediment. The dam would eventually fail.	The Structural Rehabilitation Alternative may remove accumulated sediment to restore some or all of the original sediment storage capacity and would replace the principal spillway to reduce the sedimentation rate and to maintain the current efficacy of the facility in order to reduce flooding.	The Decommissioning Alternative would completely remove the existing dam, including the accumulated sediment in the dam. The sediment would need to be moved to another location. The removal of sediment would be costly. This alternative would constitute a nonstructural solution to address this deficiency.
Deficiency 9 – Seismic and Static Stability Not Meeting Dam Safety Standards	This alternative would not upgrade Utaba Dam to meet static and/or seismic stability standards. The dam would eventually breach.	This alternative would make improvements to the dam to comply with current dam safety standards as necessary beyond the measures that would be taken to address other deficiencies. This could include flattening slopes, adding a stability berm, or removing a portion of the dam and replacing it with better material.	This alternative would completely remove and decommission the existing dam, eliminating the need to upgrade the facility for seismic and static stability criteria. This would constitute a nonstructural solution to this deficiency.

	No Action/FWOFI (Analytic Baseline)	Structural Rehabilitation Alternative	Decommissioning Alternative (Nonstructural)
Deficiency 10 – Nonstructural Solutions to Problems at Utaba Dam	Under this alternative, no federal investment would be made, so no actions, structural or nonstructural would be taken.	This alternative would include a single nonstructural measure to reconfigure the principal spillway of the dam to be able to detain water for short periods of time to allow inspection of the principal spillway conduit and allow the reservoir to serve as a fire suppression resource should wildland firefighters need an additional source of water.	The entire process of decommissioning the dam that would be undertaken as a part of this alternative would be representative of a nonstructural solution to problems at Utaba Dam. The entire dam and the accumulated sediment would be removed, and the natural course of the river would be restored to as close as possible to the pre-dam state. Wildland firefighters would not have a source of water.
Project Objectives			
Green indicates the objective was met; **Red** indicates it was not. More detail can be seen in Table 4-4 of this Plan-EA.			
Objective 1 – Dam Safety Compliance	This alternative would not bring the dam into compliance with Dam Safety criteria. Objective Not Met.	This alternative would rehabilitate Utaba Dam to bring it into compliance with NRCS and Utah dam safety standards through various structural measures. Objective Met.	This alternative would eliminate the need to rehabilitate the dam by decommissioning it. It would meet the objective to bring the facility into compliance. Objective Met.
Objective 2 – Seismic Stability	This alternative would not improve the seismic or static conditions at the facility. Objective Not Met.	The Structural Rehab. Alternative would address concerns related to the seismic and static stability of Utaba Dam through various structural measures. Objective Met.	The Decommissioning Alternative would address concerns related to the static and seismic stability of the current dam by removing it and the accumulated sediment. Objective Met.
Objective 3 – Breach/Flood Hazards	This alternative would not increase the public's awareness of breach/flood risks and the dam would eventually fail. Objective Not Met.	This alternative would increase public awareness of recognized breach and flood hazards associated with the dam through the public notification process which would explain why construction would take place and what the reasons are. Objective Met.	This alternative would increase public awareness of recognized breach and flood hazards associated with the dam through the public notification process which would explain why the dam was being decommissioned. Objective Met.

	No Action/FWOFI (Analytic Baseline)	Structural Rehabilitation Alternative	Decommissioning Alternative (Nonstructural)
Objective 4 – Sedimentation Issues	This alternative would not address sediment accumulation or storage in Utaba Dam. Objective Not Met.	This alternative may remove the accumulated sediment from the dam and rehabilitate the principal spillway to reduce the accumulation rate in the dam. Reducing the accumulation rate would allow the facility to function through its intended lifespan. Objective Met.	This alternative would remove the accumulated sediment along with the dam and deposit it elsewhere. The removal of the dam would eliminate all other sediment concerns. Objective Met.
Objective 5 – Flood Control	This alternative would not provide a floodwater retarding structure to take the peaks off flood flows or prevent the downstream blockage of infrastructure by. Objective Not Met.	This alternative would rehabilitate Utaba Dam to provide a floodwater retarding structure to take the peak off flood flows and prevent blockage of infrastructure by debris through the year 2077. Objective Met.	This alternative would not provide a floodwater retarding structure to take the peaks off flood flows or prevent the downstream blockage of infrastructure by debris through the year 2077. Objective Not Met.
Constraints			
Green indicates the constraint was met; **Red** indicates it was not. More detail can be seen in Table 4-4 of this Plan-EA.			
Constraint 1 – Special Status Species	The No Action/FWOFI Alternative would not have any impacts on ESA species. Constraint Met.	The Structural Rehab. Alternative would avoid impacts on federally listed species to the maximum extent possible. No effects on the ULT and indirect temporary effects to the WYBC. Constraint Met.	The Decommissioning Alternative would not avoid impacts to ESA species/suitable habitat to the maximum extent practicable as removal of the dam could modify ULT and WYBC habitats in the reservoir basin. Constraint Not Met.
Constraint 2 – Cultural/Historic Impacts	The No Action/FWOFI Alternative would include the eventual failure of the dam, leading to adverse effects to historic properties located within the Indirect APE. Constraint Not Met.	The Structural Rehabilitation Alternative would have no adverse effects to eligible cultural or historic properties other than the ineligible dam, which is specified in the constraint description. Constraint Met.	The Decommissioning Alternative would have no adverse effects to cultural or historic properties other than the ineligible dam, which is specified in the constraint description. Constraint Met.

	No Action/FWOFI (Analytic Baseline)	Structural Rehabilitation Alternative	Decommissioning Alternative (Nonstructural)
Constraint 3 – Property Acquisition	The No Action/FWOFI Alternative would avoid any challenges to real property acquisition to the maximum extent possible. Constraint Met.	The Structural Rehabilitation Alternative would minimize real property acquisition challenges to the maximum extent practicable. Constraint Met.	The Decommissioning Alternative would minimize real property acquisition challenges to the maximum extent practicable. Constraint Met.
Constraint 4 – Camp UTABA Impacts	Camp UTABA would be essentially destroyed when the dam eventually failed. Constraint Not Met.	There would be no adverse impacts to Camp UTABA as a result of this alternative's implementation. In fact, the camp would be protected from future damages. Constraint Met.	The decommissioning alternative would temporarily disturb Camp UTABA in the process of dam removal. This means that adverse impacts to the camp and the Durfee Creek HOA would not be avoided under this plan. Constraint Not Met.
Constraint 5 – Recreational Facilities	The No Action/FWOFI Alternative would not impact current recreational opportunities in the short term, although the impacts to Camp UTAB (included under constraint 4) would eventually occur. Constraint Met.	Under this alternative, there would be no change in the recreational opportunities that currently exist in the study area. The Camp, North Fork Park, and the other potential opportunities would remain as they are now. Constraint Met.	Under this alternative, there would be a removal of the dam, effectively eliminating a potential/existing recreational facility. Furthermore, North Fork Park would likely be used as an area to store accumulated sediment and material from the dam as it was removed but would be restored after implementation. Constraint Not Met.
Constraint 6 – Funding Constraint	This alternative would not exceed the funding limits of the PL-566 program. Constraint Met.	The Structural Rehabilitation Alternative would not exceed the funding limits established by PL-566. Constraint Met.	The Decommissioning Alternative would not exceed the funding limits established by PL-566. Constraint Met.

	No Action/FWOFI (Analytic Baseline)	Structural Rehabilitation Alternative	Decommissioning Alternative (Nonstructural)
Evaluation Criteria			
Green indicates the criteria that was met; **Red** indicates it was not. More detail can be seen in Table 4-4of this Plan-EA.			
Completeness	The No Action/FWOFI Alternative would not constitute a complete solution as no problems would be addressed.	The Structural Rehab. Alternative would account for all necessary investments needed to achieve the planned effects and constitutes a complete alternative/solution.	The Decommissioning Alternative would account for all necessary investments needed to achieve the planned effects and constitutes a complete alternative/solution.
Efficiency	This alternative would not cost anything to implement and so would constitute a cost efficient solution.	This alternative is also the NEE Alternative and has net positive economic benefits with a BCR of 3.47. This alternative would constitute a cost efficient solution.	This alternative, although not as cost efficient as the Structural Rehab plan, would still have positive net economic benefits with a BCR of 4.30. Would constitute an efficient solution. Although the BCR is higher than the Structural, the net benefits are lower and the environmental impacts are far greater.
Effectiveness	This alternative would not constitute an effective solution as no problems would be solved and no objectives would be met,	This alternative would address all of the identified problems and meet all of the opportunities. The alternative would stay within all the constraints and meet the objectives. Constitutes an effective solution.	Although all the objectives would be met, not all of the planning constraints would be adhered to under this plan. This alternative would not constitute an effective solution.
Acceptability	This alternative would not be acceptable or consistent with existing federal laws as it would not protect the environment and would not address any of the problems in the watershed.	This alternative would comply with all federal and state regulatory frameworks and is the Environmentally Preferred Alternative (from NEPA) and the Locally Preferred Alternative. The problems in the watershed would be addressed. This option constitutes an acceptable solution.	This alternative would not be acceptable, as decommissioning of the dam would not represent a viable or appropriate solution from the perspective of the Nation's general public. It would also be an unacceptable solution environmentally speaking.

5.2 Summary and Comparison of Alternatives-Ecosystem Services

Ecosystem service flow impacts for the No Action/FWOFI Alternative were projected assuming that current conditions/trends would continue to occur for the entire period of analysis while considering all reasonably forecasted future conditions within the study area. Table 5-2 below compares how well the No Action/FWOFI Alternative, Structural Rehabilitation Alternative, and Decommissioning Alternative impact the ecosystem service flows in the watershed as well as how they meet the Guiding Principles of the PR&G which are listed and defined below:

- **Healthy & Resilient Ecosystems:** A primary objective is to identify alternatives that will protect and restore ecosystem functionality by 1) avoidance of adverse impact, then 2) minimization of impacts with mitigation of any unavoidable damage, and finally 3) full mitigation to offset environmental damages. Mitigation must be included in the alternative development, design, and costs.
- **Sustainable Economic Development:** The alternatives should consider both the quantity and quality of water for both present and future generations as part of a larger economic and environmental evaluation to ensure that future projects are both economically feasible and sustainable for both the local and national best interests. The alternative should reduce risk and uncertainty, allowing a full range of adaptable management options to maintain feasibility for future projects.
- **Floodplains:** The alternatives must seek to avoid impacts to flood prone areas and floodplains and, where possible, improve floodplain sustainability and functionality.
- **Public Safety:** DM 9500-013 states, "An objective of PR&G is to reduce the risks to people including life, injury, property, essential public services, and environmental threats concerning air and water quality". Public safety, and the improvement of public safety, using nonstructural and structural options must be considered.
- **Watershed Approach:** This approach recognizes that there may be impacts both upstream and downstream of the project area and the applicable political or administrative boundaries. Under most conditions, it is necessary to evaluate the impacts beyond just a single hydrologic unit.

Table 5-2: Summary and Comparison of Alternatives – Ecosystem Services Trade-off

Criterion	No Action/FWOFI (Analytic Baseline)	Structural Rehabilitation Alternative	Decommissioning Alternative (Nonstructural)
Alternative I.D.			
Locally Preferred	NA	X	NA
Nonstructural	NA	NA	X
Environmentally Preferred	NA	X	NA
National Economic Efficiency	NA	X	NA
Socially Preferred	NA	X	NA
Preferred Alternative	NA	X	NA

Criterion	No Action/FWOFI (Analytic Baseline)	Structural Rehabilitation Alternative	Decommissioning Alternative (Nonstructural)
Guiding Principles			
The alternative marked with X and colored **green** is the plan that best meets the specified Guiding Principles of the PR&G.			
Healthy/Resilient Ecosystems	NA	X	NA
Sustainable Economic Development	NA	X	NA
Floodplains	NA	X	NA
Public Safety	NA	NA	X
Watershed Approach	NA	X	NA
Ecosystem Services Effects			
The alternatives colored **green** indicates improvement in Service provision, **red** indicates impairment, **yellow** indicates maintenance of existing conditions for the ecosystem service or mixed impact.			
Provisioning Services			
Water Quality (Non-Monetized)	NEGATIVE IMPACT	NO IMPACT	MIXED IMPACT
Irrigation/Agriculture (Non-Monetized)	NO IMPACT	NO IMPACT	NO IMPACT
DS Fish Population (Non-Monetized)	NEGATIVE IMPACT	NO IMPACT	POSITIVE IMPACT
Regulating Services			
Flood Control/Public Safety (Monetized)	NEGATIVE IMPACT	POSITIVE IMPACT	POSITIVE IMPACT
Fire Suppression Resource (Non-Monetized)	NO IMPACT	POSITIVE IMPACT	NO IMPACT
Cultural Services			
Youth Camps (Non-Monetized)	NEGATIVE IMPACT	POSITIVE IMPACT	NO IMPACT
Aesthetic Value of Watershed (Non-Monetized)	NEGATIVE IMPACT	NO IMPACT	NEGATIVE IMPACT
North Fork Park (Non-Monetized)	NO IMPACT	NEGATIVE IMPACT	NEGATIVE IMPACT

Criterion	No Action/FWOFI (Analytic Baseline)	Structural Rehabilitation Alternative	Decommissioning Alternative (Nonstructural)
WYBC Habitat Existence (Non-Monetized)	NEGATIVE IMPACT	NO IMPACT	NO IMPACT
Supporting Services			
Not Evaluated in this Plan-EA	NA	NA	NA
Economic Analysis			
Costs			
Total Project Investment	**$0**	**$6,204,000**	**$4,504,000**
Annual Project Investment	$0	$249,100	$180,600
Annual OM&R Costs	$15,007	$8,559	$10,000
Total Annual Project Costs	**$15,007**	**$257,659**	**$190,600**
Monetized Benefits for Ecosystem Services			
Provisioning	Not Monetized	Not Monetized	Not Monetized
Regulating	$0	$893,358	$819,767
Cultural	Not Monetized	Not Monetized	Not Monetized
Supporting	N/A	N/A	N/A
Total Annual Monetized Benefits	**$0**	**$893,358**	**$819.767**
Total Annual Monetized Costs	**$1,003,809**	**$257,659**	**$190,600**
Benefit-Cost Ratio	**0.0**	**3.47**	**4.30**
Annual Monetized Net Benefit	**$0**	**$636,699**	**$629,167**
Regional Economic Development/Economic Impact Assessment (Not Performed for this Plan-EA)			
Regional Employment	N/A	N/A	N/A
Regional Income	N/A	N/A	N/A
Regional Impacts (Other)	N/A	N/A	N/A

5.3 Effects of Individual Alternatives Relative to Resource Concerns

The following list defines the environmental resource impact terms, including classifications and descriptions, in this section.

- **Direct Effect or Impact:** Impacts caused by a Proposed Action and occurring at the same time and place.
- **Indirect Effect or Impact:** Impacts caused by an action that are later in time or farther removed in distance but are reasonably expected or foreseeable.
- **Cumulative Effect or Impact:** The impacts on the environment that result from the incremental impact of actions when added to other past, present, and reasonably foreseeable future actions regardless of the agency (federal or non-federal) or person undertaking such other action.
- **Temporary:** Impacts or effects that are not lasting and the affected resources would be expected to return to the pre-project state. Typically, this is for the duration of construction and a designated restoration period.
- **Permanent:** Impacts or effects that last for an extended duration, often for years after construction. For this evaluation, these impacts are considered to be 50 years based on the design life of the project.
- **Benefits:** Effects that mitigate or resolve previous environmental consequences or damage and/or enhance the resources.

The individual resource concerns are evaluated for impacts under each alternative in the sections below. Following these assessments, there is a summary and comparison table for the effects on resource concerns. Table 5-3 through Table 5-29 present a more detailed analysis of the environmental impacts on each of the resources and will allow for a more representative analysis of the overall impacts caused by each of the three alternatives evaluated. Each table will describe the resource category followed by the expected environmental impacts to the resource under each of the three evaluated alternatives. Each table is also color coded to correspond with the type of resource impact. Red indicates a Negative impact, Yellow indicates No impact/No change, and Green indicates a Positive impact. All impacts may be temporary or permanent as well as direct or indirect, which is included in the text along with comments explaining the impact in detail. Additionally, for each resource concern, the magnitude of impacts is evaluated.

5.3.1 Geology

The Structural Rehabilitation and Decommissioning Alternatives would both improve the seismic and static stability of Utaba Dam either through structural improvements or the outright removal of the dam itself. The No Action/FWOFI Alternative would have indirect and permanent adverse impacts on seismic/static stability conditions.

Table 5-3: Geology Impact Comparison

Alternative	Geology Impacts
No Action/FWOFI	**Indirect Permanent Impact.** Under the No Action/FWOFI Alternative, there would be no improvements made to the seismic or static stability of Utaba Dam, which would remain in poor condition. Long-term erosion risks would be high following a dam failure, which is reasonably foreseeable.
Structural Rehabilitation	**Direct Permanent Benefit.** Under the Structural Rehabilitation Alternative, the seismic and static stability of the structure would be improved through all necessary improvements to bring the dam into compliance with NRCS and Utah Dam Safety standards including possibly flattening upstream/downstream slopes, adding a stability berm at the upstream and/or downstream toe of the dam, removing a portion of the dam and replacing it with better material, and adding a filter and drain system to mitigate seepage. All these actions would improve the strength and stability of downstream geologic materials.
Decommissioning	**Direct Permanent Benefit.** Under the Decommissioning Alternative, the seismic and static stability of the site would be improved as a result of the removal of the dam, which would eliminate the need for adjustments to improve seismic/static stability. The removal of the dam would include efforts to restore the site to as close to the pre-dam state as possible which would eventually include natural erosion patterns.

5.3.2 Soil Resources

The No Action/FWOFI Alternative would have indirectly permanent adverse impacts on soil resources. Although the Structural Rehabilitation and Decommissioning Alternatives would have temporary impacts, they would ultimately provide long-term benefits to soil conditions.

Table 5-4: Soil Resources Impact Comparison

Alternative	Soil Resources Impacts
No Action/FWOFI	**Indirect Permanent Impact.** Under this alternative, soil erosion would continue as a result of aging infrastructure and a general lack of rehabilitation. Following the eventual failure of the dam, soil erosion would be significant during that event, leading to downstream channelization, sedimentation, and water quality issues.
Structural Rehabilitation	**Direct Temporary Impact.** During construction, the presence of heavy machinery and ongoing ground disturbance would compact the soils and generate soil erosion into the channels which could cause temporary adverse impacts to water quality downstream.
	Direct Permanent Benefit. Dam rehabilitation measures, including the protection and stabilization of the embankment, reduce the risk of a dam failure, which reduces risks of additional impairment to downstream nutrient loading and water quality resulting from soil loss/erosion.

Alternative	Soil Resources Impacts
Decommissioning	**Direct Temporary Impact.** During construction, the presence of heavy machinery and ongoing ground disturbance would compact the soils and generate soil erosion into the channels which could cause temporary adverse impacts to water quality downstream.
	Indirect Permanent Benefit. Following the removal of the dam, soil erosion conditions would stabilize over time, leading to more natural soil conditions.

5.3.3 Sedimentation Rates

The Structural Rehabilitation Alternative would reduce sedimentation rates in the reservoir, the Decommissioning Alternative would have temporary adverse impacts during construction, and the No Action/FWOFI Alternative would allow adverse existing conditions to continue.

Table 5-5: Sedimentation Rates Impact Comparison

Alternative	Sedimentation Rates Impacts
No Action/FWOFI	**Direct Permanent Impact.** If no federal funding was provided, the dam would remain in its current condition and sediment would continue to accumulate at its current rate until the risk of a failure became imminent and occurred. The failure of the dam would cause multiple adverse effects downstream as a result of the washed out sediment.
Structural Rehabilitation	**Direct Permanent Benefit.** Improvements made to the principal spillway during construction would allow finer sediments (i.e., sands, silts, and clays) to pass through the dam instead of settling out. These materials would continue downstream instead of accumulating in the dam, as they currently do. This would create a significant decrease in the sediment accumulation rate in the reservoir. Downstream channel erosion (i.e., changes to channel morphology) depends on the amount of sediment entrained in the water. Passing only fine-grained sediment through the dam would reduce the water's ability to erode the channel, as the flow approaches sediment carrying capacity.
Decommissioning	**Direct Temporary Impact.** Under the Decommissioning Alternative, all 33 acre-feet of accumulated sediment would need to be removed, which would inevitably include some sediment release downstream in the process, which can cause impairment to water quality conditions. The sedimentation rate would no longer be relevant in the long-term if this alternative was implemented, but it would have some short-term impacts during implementation.

5.3.4 Surface Water Quality & Flow Characteristics

Both the Structural Rehabilitation and Decommissioning Alternatives would have indirect temporary adverse effects during implementation, whereas the No Action/FWOFI Alternative would have direct and permanent adverse effects on surface water quality conditions.

Table 5-6: Surface Water Quality & Flow Impact Comparison

Alternative	Surface Water Quality and Flow Impacts
No Action/FWOFI	**Direct Permanent Impact.** Downstream water quality would decline as a result of sedimentation and nutrient loading following the failure of the dam. The increase in sediment would exacerbate the ongoing dissolved oxygen impairment in the North Fork of the Ogden River and would impair the water for turbidity and TSS.
Structural Rehabilitation	**Indirect Temporary Impact.** Under this alternative, short-term adverse impacts to water quality would occur during construction. This would occur as a result of sediment and dust generated through ground disturbance and the transport of material, which could have water quality impacts downstream such as increased turbidity and total suspended solids TSS. The impaired dissolved oxygen conditions in the North Fork of the Ogden River would continue under this alternative.
Decommissioning	**Indirect Temporary Impact.** Under this alternative, there would be short-term declines in downstream water quality as ground disturbance and material transport occurred with possible impairments to turbidity and TSS. However, following restoration of the site, water quality conditions would stabilize and return to pre-implementation conditions.

5.3.5 Groundwater

The No Action/FWOFI Alternative would have long-term permanent adverse effects on groundwater conditions at the site, whereas the Structural Rehabilitation Alternative would provide a long-term benefit to groundwater conditions. The Decommissioning Alternative would have indirect permanent adverse effects on groundwater conditions as a result of the loss of wetlands and riparian communities that would occur as a result of decommissioning.

Table 5-7: Groundwater Impact Comparison

Alternative	Groundwater Impacts
No Action/FWOFI	**Direct Permanent Impact.** Taking no action would result in the continuance of groundwater seepage issue near the toe of the dam and at the principal spillway outlet conduit. Failure to address these deficiencies will result in the continued structural instability of the dam and would contribute to the reasonably foreseeable dam failure/breach.
Structural Rehabilitation	**Direct Permanent Benefit.** Under the Structural Rehabilitation Alternative, groundwater seepage at the toe of the dam and at the principal spillway outlet conduit would be controlled through the installation of a downstream filter and drain system. This would mitigate the concerns related to groundwater at the site.
Decommissioning	**Indirect Permanent Impact.** Following the decommissioning of the dam, groundwater levels would likely return to pre-dam conditions, which would eliminate existing wetlands, riparian areas, and suitable habitats for federally protected plant and animal species that have been created by the higher groundwater conditions at the dam. This plan would have significant environmental effects as a result of changes in the groundwater levels.

5.3.6 Floodplain Management

Both the Structural Rehabilitation and the Decommissioning Alternatives would experience direct long-term benefits to floodplain management if selected for implementation, whereas the No Action/FWOFI Alternative would result in direct and permanent adverse effects to the floodplain. However, the Decommissioning Alternative would also have indirect long-term adverse effects that the Structural Rehabilitation Alternative would not have because, without the dam, the risk of flooding would be increased.

Table 5-8: Floodplain Management Impact Comparison

Alternative	Floodplain Management Impacts
No Action/FWOFI	**Direct Permanent Impact.** Without the implementation of an Action Alternative or the contribution of federal funding, the dam would continue to be at risk of failure. The risk of flooding would remain extremely high without any preventative measures. Eventually, a breach would become imminent and occur. When this event occurs, there will be significant damages to properties and the local floodplain as a result.
Structural Rehabilitation	**Direct Permanent Benefit.** As the principal and auxiliary spillways would be replaced under this alternative, the risk of failure and therefore of flooding would be substantially reduced as a result of this alternative. This would provide protection to properties against flooding and would also provide local protection of the floodplain downstream of Utaba Dam.
Decommissioning	**Indirect Permanent Effect.** If the dam were to be removed, there would no longer be a buffer against flooding in the watershed. Utaba Dam exists to take the peaks off of flood flows and so, without it, the risks of floodplain damage would be increased over time as that buffer would no longer exist.
	Direct Permanent Benefit. Following the removal of the dam, the floodplain itself would be restored to its natural condition ("pre-dam" condition), which would eliminate the risks of damage to the floodplain that would occur from a breach. Additional risks to damages to downstream properties within the floodplain would also be mitigated.

5.3.7 Wetlands and Waters of the United States (WOTUS)

Although there would be no change to wetlands or WOTUS under the No Action/FWOFI Alternative, there would be direct permanent impacts to wetlands that would occur under either the Structural Rehabilitation or the Decommissioning Alternative, although much more under Decommissioning.

Table 5-9: Wetlands and WOTUS Impact Comparison

Alternative	Wetlands and WOTUS Impacts
No Action/FWOFI	**Direct Permanent Impact**. Downstream wetlands/aquatic resources would be damaged once the dam breached. Additionally, the water quality of Pineview Reservoir, a WOTUS, would be damaged by sediment following a breach.

Alternative	Wetlands and WOTUS Impacts
Structural Rehabilitation	**Direct Permanent Impact**. Under the Structural Rehabilitation Alternative, approximately 2.64 acres of aquatic resources would be disturbed during construction (2.03 acres of wetlands, 0.08 acres of stream, and 0.53 acres of open water). The alternative was developed in compliance with EO 11990 requirements to ensure no other practicable alternatives exist with less wetlands impacts and minimize harm to wetlands to the greatest extent practicable. Compensatory mitigation would be required as impacts to wetlands were determined using the hierarchy disclosed in the 1990 memorandum of agreement (MOA) between the USACE and the EPA. This hierarchy prioritizes first avoidance of wetland impacts entirely, then minimization of impacts to the maximum extent possible, then, and only then, mitigation for unavoidable wetlands impacts.
Decommissioning	**Direct Permanent Impact**. Under the Decommissioning Alternative, a significantly higher number of aquatic resources would be disturbed, up to 5.48 acres as the dam is removed (4.20 acres of wetlands, 0.52 acres of stream, and 0.76 acres of open water). Significant compensatory mitigation would be required as impacts to wetlands were determined using the hierarchy disclosed in the 1990 memorandum of agreement (MOA) between the USACE and the EPA. This hierarchy prioritizes first avoidance of wetland impacts entirely, then minimization of impacts to the maximum extent possible, then, and only then, mitigation for unavoidable wetlands impacts.

5.3.8 Air Quality

When it comes to impacts on air quality, only the No Action/FWOFI Alternative would have no impact. Emissions generated during the implementation of either the Structural Rehabilitation or the Decommissioning Alternatives would create temporary adverse impacts on air quality. However, best management practices (BMPs) such as the implementation of a Dust Control Plan would occur under any selected Action Alternative.

Table 5-10: Air Quality Impact Comparison

Alternative	Air Quality Impacts
No Action/FWOFI	**No Impact**. Conditions would remain the same so no impacts on the air quality at the site would occur under this alternative.
Structural Rehabilitation	**Direct Temporary Impact**. During construction, there would be emissions from heavy equipment and machinery, that would result in a temporary state of degraded local air quality conditions. Conditions would return to pre-construction levels following the end of the implementation phase.
Decommissioning	**Direct Temporary Impact**. During construction, there would be emissions from heavy equipment and machinery, that would result in a temporary state of degraded local air quality conditions. Conditions would return to pre-construction levels following the end of the implementation phase.

5.3.9 Threatened and Endangered Botanical Species

There is suitable habitat for the threatened Ute Ladies'-Tresses (ULT) in the study area. The Structural Rehabilitation Alternative would work at least 300 feet away from these areas. However, the Decommissioning Alternative would require work to occur within 300 feet of the ULT habitat but would also have the potential to provide indirect benefits in the future. The No Action/FWOFI Alternative would eventually damage downstream ULT habitat following the failure of the dam.

Table 5-11: Threatened and Endangered Botanical Species Impact Comparison

Alternative	Threatened and Endangered Botanical Species Impacts
No Action/FWOFI	**Indirect Permanent Impact**. Following the breach/failure of Utaba Dam, the ULT habitat could be reduced or destroyed as a result of changes in hydrologic and groundwater conditions.
Structural Rehabilitation	**No Impact**. Under the Structural Rehabilitation Alternative, there would be no change or effects to the suitable ULT habitat in the study area. Construction would avoid the suitable habitat by the 300-foot buffer zone at a minimum. The only exception to this would be the installation of 2 measurement gauges along the channels of both the North Fork of the Ogden River and Cutler Creek, which would be installed outside of suitable ULT habitat areas and would not include the use of any heavy equipment.
Decommissioning	**Direct Temporary Impact**. The work included in the alternative to remove the dam and all the accumulated sediment would require work to occur within 300-feet of the suitable ULT habitat and therefore would have temporary disturbance from construction. The removal of the dam would also reduce or destroy suitable habitat as hydrologic/groundwater conditions change.
	Indirect Permanent Benefit. Although the removal of the dam would result in the loss of ULT habitat due to hydrologic and groundwater changes, there would likely be a suitable new habitat created in the future as the site is stabilized following natural restoration. ULTs are also known to take root easily in recently disturbed sites.

5.3.10 Invasive Species and Noxious Weeds

The Structural Rehabilitation and Decommissioning Alternatives each pose an inherent risk of introducing or spreading invasive plant species and/or noxious weeds during implementation. However, if either Action Alternative is selected for implementation, appropriate BMPs would be adhered to in order to minimize the risks of introducing these species. This includes cleaning of construction equipment prior to delivery to the site. The No Action/FWOFI Alternative would not have any impact on current conditions for invasive species or noxious weeds.

Table 5-12: Invasive Species and Noxious Weeds Impact Comparison

Alternative	Invasive Species and Noxious Weeds Impacts
No Action/FWOFI	**No Impact**. A future breach of the dam would create downstream disturbance for invasive plants and noxious weeds.
Structural Rehabilitation	**Indirect Temporary Impact**. This would include the potential to introduce or spread invasive species and/or noxious weeds during construction.

Alternative	Invasive Species and Noxious Weeds Impacts
Decommissioning	**Indirect Temporary Impact**. This would include the potential to introduce or spread invasive species and/or noxious weeds during implementation.

5.3.11 Riparian Areas

There are no alternatives considered in the final array that would have no impact on riparian areas in the study area. In fact, only the Decommissioning Alternative would provide any benefits to this resource concern.

Table 5-13: Riparian Areas Impact Comparison

Alternative	Riparian Areas Impacts
No Action/FWOFI	**Indirect Permanent Impact**. Current conditions for riparian areas would continue until the reasonably foreseeable dam breach/failure occurred, at which point various upstream and downstream riparian areas would be damaged or destroyed as a result of the breach.
Structural Rehabilitation	**Direct Temporary Impact**. If this alternative were selected for implementation, there would be some disturbance to existing riparian areas in the study area (i.e. removal of woody & non-woody vegetation (~0.20 acres at the toe of the dam)). The extent of the riparian impacts would not be great enough, or last long enough, to have any significant impact on factors such as nutrient cycling, water temperature, or cold water dependent species. In fact, the continuous flow that would be created at the reservoir by implementation of this alternative would allow for water temperatures to remain cooler, instead of heating up when detained in the dam under current conditions. Riparian areas would be restored where they are disturbed in the study area.
Decommissioning	**Direct Temporary Impact**. If the Decommissioning Alternative were selected for implementation, there would be some disturbance to existing riparian areas in the study area. However, riparian areas would be restored where they are disturbed.
	Direct Permanent Benefit. In the case of decommissioning the dam, new riparian areas would be created in the locations currently occupied by Utaba Dam/Reservoir.

5.3.12 Threatened and Endangered Animal Species

There is suitable habitat present for the threatened Western Yellow-billed Cuckoo (WYBC) in the study area. Although no ground disturbing work would occur within the habitat corridors, both Action Alternatives would adversely affect any WYBC individuals present during construction through noise impacts. The No Action/FWOFI Alternative would indirectly affect the WYBC by severely damaging or completely extirpating downstream habitat during a dam failure event.

Table 5-14: Threatened and Endangered Animal Species Impact Comparison

Alternative	Threatened and Endangered Animal Species Impacts
No Action/FWOFI	**Indirect Permanent Impact**. In the event of a dam failure/breach, any downstream WYBC habitat located within the floodplain would be severely damaged or even completely destroyed as a result of flood damages. Any WYBC individuals living in these downstream areas would experience displacement.
Structural Rehabilitation	**Indirect Temporary Impact**. If selected, there would be temporary noise disturbance to any WYBC individuals living in areas of suitable habitat within a half-mile radius of the Action Area. BMPs would be employed to mitigate noise impacts.
	No Impact. The rehabilitation of the dam would safeguard and protect the existing suitable WYBC habitat in the Action Area from the adverse effects of a dam breach/failure.
Decommissioning	**Indirect Temporary Impact**. If selected for implementation, this alternative would have temporary noise disturbance to any WYBC individuals living in areas of suitable habitat within a half-mile of the Action Areas. BMPs would be employed to mitigate noise impacts. Additionally, this alternative's implementation footprint would be larger than the Structural Rehabilitation Alternative, requiring some work to occur in suitable WYBC habitat.
	Indirect Permanent Benefit. Decommissioning would create additional potential habitat for the WYBC and would create upstream/downstream habitat continuity.

5.3.13 Fish and Wildlife

The No Action/FWOFI Alternative would have indirect long-term adverse effects on conditions for fish and wildlife in the watershed. The two Action Alternatives would both have direct temporary adverse effects during construction but would ultimately offer indirect long-term benefits following the completion of the implementation phase.

Table 5-15: Fish and Wildlife Impact Comparison

Alternative	Fish and Wildlife Impacts
No Action/FWOFI	**Indirect Permanent Impact**. Habitat for fish and wildlife species downstream of Utaba Dam, including in-stream fish species (which represent a provisioning ecosystem service), would be damaged or destroyed following a dam failure/breach event.
Structural Rehabilitation	**Indirect Permanent Benefit**. Passing only fine sediment downstream from an upstream reservoir can degrade habitat conditions for many native stream-adapted fish species, including Bonneville cutthroat trout, mottled sculpin, speckled dace, mountain sucker, and whitefish, all of which rely on clean, coarse-grained substrate for spawning, feeding, or cover. Fine sediment can embed gravels, reduce interstitial spaces, and limit oxygen exchange, negatively impacting these species, while more tolerant non-native generalists such as common carp, green sunfish, and black bullhead catfish may benefit or remain unaffected. While high spring flows and natural sediment transport—including coarse material—are integral to the ecological function of these systems, the current degraded condition of the watershed and aging infrastructure present risks of unnatural flood or breach events that could cause excessive sediment pulses, destabilize channels, and permanently degrade habitat. The rehabilitated dam would provide an indirect, permanent benefit to fish and wildlife by improving water quality, stabilizing flow regimes, and retaining sediment in a controlled manner. Additionally, the energy level would be higher downstream than at Utaba, meaning the fine sediments would not settle out until they reach Pineview Reservoir. These conditions would help protect downstream habitat, mitigate unnatural disturbances, and support the long-term persistence of sensitive instream fish species..
	Direct Temporary Impact. Construction would create a potential temporary disturbance for any fish/wildlife species that may be present at that time. The temporary disturbance would be primarily from noise impacts generated by heavy equipment during construction that could discourage wildlife from being in the area for a period of time.
Decommissioning	**Indirect Permanent Benefit**. Following implementation (removal of the dam), the area would be restored to as close to pre-dam natural conditions as possible which would create a quieter and more suitable habitat for fish and wildlife in the study area.
	Direct Temporary Impact. Alternative implementation would create a potential temporary disturbance for any fish/wildlife species that may be present at that time. The temporary disturbance would be primarily from noise impacts generated by heavy equipment during construction that could discourage wildlife from being in the area for a period of time.

5.3.14 Migratory Birds and Eagles

All three considered alternatives in the final array would experience indirect adverse effects if selected for implementation. However, the two Action Alternatives would only constitute

temporary effects limited to the implementation period whereas the No Action/FWOFI Alternative would have a permanent adverse effect on migratory birds and eagle species.

Table 5-16: Migratory Birds and Eagles Impact Comparison

Alternative	Migratory Birds and Eagles Impacts
No Action/FWOFI	**Indirect Permanent Impact**. Migratory birds and eagles would lose habitat in downstream riparian areas as a result of damages incurred in a dam failure/breach event.
Structural Rehabilitation	**Indirect Temporary Impact**. There would be temporary noise impacts to migratory birds and eagles during the implementation period. Appropriate noise BMPs would be adhered to in order to minimize the impacts.
Decommissioning	**Indirect Temporary Impact**. There would be temporary noise impacts to migratory birds and eagles during the implementation period. Appropriate noise BMPs would be adhered to in order to minimize the impacts.

5.3.15 Socioeconomics

In regard to the local economy and socioeconomics, there are significant differences between the No Action/FWOFI Alternative and the two Action Alternatives. The Action Alternatives would each experience direct long-term and temporary benefits to socioeconomic conditions, whereas the No Action/FWOFI Alternative would generate direct short-term adverse effects.

Table 5-17: Socioeconomics Impact Comparison

Alternative	Groundwater Impacts
No Action/FWOFI	**Direct Temporary Impact**. In the event of a dam failure/dam breach, there would be damages to properties and businesses located in the breach floodplain. Costs to repair damages would be incurred, temporarily impacting the local economy in a negative way.
Structural Rehabilitation	**Direct Temporary & Permanent Benefit**. During construction, temporary economic benefits would be created through the creation of jobs to execute construction/rehabilitation. The value of flood damage reduction economic benefits would be approximately $893,358, constituting a direct permanent benefit to socioeconomic conditions and regulating ecosystem services in the study area.
Decommissioning	**Direct Temporary & Permanent Benefit**. During implementation, temporary economic benefits would be generated through the creation of jobs to execute the dam removal/decommissioning. The removal of the dam would eliminate the risks associated with a dam failure/breach event and would have a flood damage reduction value of approximately $819,767, constituting a direct permanent benefit to socioeconomic conditions and regulating ecosystem services in the study area.

5.3.16 Land Use

Of the three alternatives in the final array, the Structural Rehabilitation Alternative is the only one that would provide any benefits on land use in the watershed, although it would also have some temporary impacts during construction. The Decommissioning and No Action/FWOFI Alternatives would adversely affect land use conditions, with the Decommissioning Alternative having both permanent and temporary impacts.

Table 5-18: Land Use Impact Comparison

Alternative	Land Use Impacts
No Action/FWOFI	Direct Permanent Impact. In the event of a dam failure/breach, Camp UTABA and some property within the Durfee Creek Homeowner's Association (HOA) would be damaged. North Fork Park would not be affected under this alternative.
Structural Rehabilitation	Direct Permanent Benefit. Under this alternative, the land use purposes would remain in their existing condition. However, benefits would occur as a result of the land being improved and protected for future sustainability and continued use as a result of structural rehabilitation measures.
	Direct Temporary Impact. During construction, there would be impacts to North Fork Park, which would be utilized as a staging, storage, and borrow area. However, the SLO would restore the park following construction to offset impacts. Camp UTABA would not be able to operate normally during the implementation period.
Decommissioning	Direct Permanent Impact. The removal of the dam would eliminate the ability of the site to take the peaks off of flood flows and would increase susceptibility to flooding downstream without the dam serving as a buffer.
	Direct Temporary Impact. During construction, there would be temporary impacts to North Fork Park, which would be utilized as a staging, storage, and borrow area. However, Weber County would restore the park following implementation to offset impacts. Camp UTABA would not be able to operate normally during the removal of the dam and the accumulated sediment.

5.3.17 Cultural and Historic Resources

The alternatives could potentially affect historic properties within the Direct APE. Pursuant to the regulations of the Advisory Council on Historic Preservation (ACHP) on implementing Section 106 of the NHPA (54 U.S.C. 306108 and 36 CFR Part 800 (1966, as amended in 2004)), federal agencies must consider the potential effect of undertakings on "historic properties." "Historic Properties" refer to cultural resources listed in, or are eligible for listing in, the National Register of Historic Places (NRHP). The effects of each alternative are identified with a summary of those effects provided in the comments.

The cultural resources inventory conducted by Bighorn Archaeological Consultants recommended there would be no adverse effect to historic properties. Camp UTABA was listed as eligible for the NRHP as a historic district. Through consultation, the NRCS determined that there would be no adverse effect to Camp UTABA with the only impact being the destruction of a fire pit, identified as a non-contributing feature. Consultation on the effects determination was conducted

per 36 CFR 800.5, including with the Utah SHPO, who concurred with the effects determination on October 11, 2024. NRCS followed consultation protocols described in Section V.c.1 of the Prototype Programmatic Agreement between the NRCS and Utah SHPO where "NRCS may provide its proposed Direct APE, identification of historic properties and/or scope of identification efforts, and assessment of effects in a single transmittal". Consultation with SHPO and Tribes under Section 106 of the NHPA occurred beginning on September 6, 2024. Consultation with the USACE occurred in January of 2025, and consultation with Camp UTABA regarding effects to the camp occurred during this same time period. Reverand Price, the manager of Camp UTABA, agreed with the finding that the camp is eligible as a Historic District and that there would be no adverse effect. The table below presents the effects determinations for the eligible sites within the Direct APE. If any inadvertent discovery of cultural resources or human remains occurs during construction, the procedures outlined in the NRCS Prototype Programmatic Agreement with the Utah SHPO would be followed.

Table 5-19: Effects Comparison of Alternatives to Historic Properties

	Impacts/Effects to Historic Properties
Site Number/Name	**42WB593/Camp UTABA**
No Action/FWOFI	**Direct Permanent Adverse Effect**. Following a dam breach, Camp UTABA would be destroyed as it is located at the base of the dam.
Structural Rehabilitation	**No Adverse Effect**. Consultation letters from Sept 2024 clearly state effects to Camp Utaba will consist of: "The Action Alternative will result in the elimination of a non-contributing fire ring used by Camp Utaba, and the access road through the east edge of Camp Utaba may be used to access the dam during construction. The road would be returned to pre-construction condition".
Decommissioning	**Indirect Permanent Adverse Effect**. Removing the Utaba Dam would eliminate it as a flood control resource and would leave Camp UTABA susceptible to future damages from flood events.

5.3.18 Public Health and Safety

The two Action Alternatives would provide benefits, whereas conditions would deteriorate further under the No Action/FWOFI Alternative. The Decommissioning Alternative would also have permanent adverse effects as a result of the loss of the dam entirely.

Table 5-20: Public Health and Safety Impact Comparison

Alternative	Public Health and Safety Impacts
No Action/FWOFI	**Direct Permanent Impact**. Public health and safety conditions would continue to deteriorate under this alternative, as a dam failure/breach event would become imminent and can be reasonably expected to occur, incurring greater damages to property, infrastructure, and potentially life.
Structural Rehabilitation	**Direct Permanent Benefit**. The rehabilitation of Utaba Dam would greatly improve public safety conditions by mitigating the risk of a failure of the dam/breach event.

Alternative	Public Health and Safety Impacts
Decommissioning	**Direct Permanent Benefit**. Decommissioning Utaba Dam would remove the risk of a dam failure/breach event from occurring, thereby protecting public safety.
	Direct Permanent Impact. The complete removal of Utaba Dam would eliminate an important flood dam which takes the peaks off flood flows. Without this resource, downstream communities would become more susceptible to flooding.

5.3.19 Scenic Beauty and Visual Resources

All three alternatives considered would have adverse effects on visual resources in the project area. However, only the Structural Rehabilitation Alternative would be limited to temporary effects, where the No Action/FWOFI and Decommissioning Alternatives would have permanent impacts.

Table 5-21: Scenic Beauty and Visual Resources Impact Comparison

Alternative	Scenic and Visual Resource Impacts
No Action/FWOFI	**Direct Permanent Impact**. Following the eventual and imminent failure/breach of Utaba Dam, scenic/aesthetic conditions would become impaired, particularly as a result of erosion and sediment damages.
Structural Rehabilitation	**Direct Temporary Impact**. Scenic beauty would essentially remain in its current state following construction, but there would be temporary impediments to the viewshed during the construction period.
Decommissioning	**Direct Temporary Impact.** Direct temporary impacts would occur during the implementation period as the viewshed would be impeded by construction equipment.
	Indirect Permanent Impacts. Indirect permanent impacts would occur as scenic beauty is modified following decommissioning with a naturalized floodplain and the lost aesthetics of the floodplain, which include wetlands, riparian areas, and wildlife habitat. Although many people would agree the loss of the dam would impair the viewshed, others would argue that the dam removal would improve the scenic beauty. There is an element of perspective involved in the evaluation of impacts.

5.3.20 Parklands

There would be temporary impacts to North Fork Park during construction, as it would be used as a staging/borrow area. However, the SLO has committed to restore the park to pre-construction conditions following implementation.

Table 5-22: Parklands Impact Comparison

Alternative	Parklands Impacts
No Action/FWOFI	**No Impact**. North Fork Park would remain in its current condition.

Alternative	Parklands Impacts
Structural Rehabilitation	**Direct Temporary Impact**. Construction activities associated with the Structural Rehabilitation Alternative would utilize North Fork Park as a staging/borrow area, heavily disturbing it. The SLO would restore the park to pre-construction conditions following implementation.
Decommissioning	**Direct Temporary Impact**. Decommissioning the dam would require damages to North Fork Park as removed sediment would need to be placed there. The SLO would be responsible for restoring the park to pre-construction conditions following implementation.

5.3.21 Noise

There would be no change in noise conditions in the study area under the No Action/FWOFI Alternative. There would be temporary impacts to noise conditions as a result of construction and implementation under both the Structural Rehabilitation Alternative and the Decommissioning Alternative.

Table 5-23: Noise Impact Comparison

Alternative	Noise Impacts
No Action/FWOFI	**No Impact**. Current noise levels in the study area would not be changed if the No Action/FWOFI Alternative was selected for funding.
Structural Rehabilitation	**Direct Temporary Impact**. Construction activities associated with the Structural Rehabilitation Alternative would generate significant noise that could disturb residents of the Durfee Creek HOA, fish and wildlife, migratory birds/eagles, and any WYBC individuals that may be present within a half-mile radius of the study area. Appropriate BMPs for noise disturbance would be implemented to minimize impacts to these resource concerns. Noise levels would return to pre-construction conditions following the implementation period.
Decommissioning	**Direct Temporary Impact**. Implementation activities associated with the Decommissioning Alternative would generate significant noise that could disturb residents of the Durfee Creek HOA, fish and wildlife, migratory birds/eagles, and any WYBC individuals that may be present within a half-mile radius of the study area. Appropriate BMPs for noise disturbance would be implemented to minimize impacts to these resource concerns.

5.3.22 Transportation Infrastructure

Only the Structural Rehabilitation Alternative would have benefits to the conditions for transportation infrastructure. The other alternatives would have adverse impacts.

Table 5-24: Transportation Infrastructure Impact Comparison

Alternative	Transportation Infrastructure Impacts
No Action/FWOFI	**Direct Temporary Impact**. In the event of a dam failure/breach, significant damages would be incurred on downstream properties and infrastructure, including roads. These costs would be expensive to mitigate. The damages would, however, be temporary even if very significant.

Alternative	Transportation Infrastructure Impacts
Structural Rehabilitation	**Direct Permanent Benefit**. The rehabilitation measures that would be implemented at Utaba Dam under this alternative would provide significantly improved protection of downstream transportation infrastructure, including roads. This infrastructure would no longer be at imminent risk of damage from flooding.
Decommissioning	**Indirect Permanent Impact**. As a result of the removal of Utaba Dam, there would be infrastructure adjustments needed for new land use at the site and there would be a far greater potential for damages to occur to transportation infrastructure downstream during a flood event. This is because there would no longer be a retarding structure like the dam to take the peaks off of the flood flows.

5.3.23 OM&R Status of the Dam

The No Action/FWOFI Alternative would have adverse impacts on conditions for operation, maintenance, & replacement (OM&R) at the site to mitigate damages from the reasonably foreseeable breach event. The Structural Rehabilitation Alternative would protect against a breach and save OM&R costs. The Decommissioning Alternative would eliminate the need for OM&R.

Table 5-25: OM&R Status of the Dam Impact Comparison

Alternative	OM&R Impacts
No Action/FWOFI	**Direct Permanent Impact**. In the event of a dam failure/breach, which is reasonably foreseeable under the FWOFI Alternative, OM&R challenges associated with the site would increase due to maintenance needs prior to the dam's failure and replacement costs following the breach. There would also be additional costs to repair damaged infrastructure and to clean debris from the site.
Structural Rehabilitation	**Direct Permanent Benefit**. Following the rehabilitation of Utaba Dam, OM&R costs would stabilize and be significantly reduced from their current state.
Decommissioning	**Direct Permanent Benefit**. Following the removal of the dam, there would no longer be a need for any OM&R costs at the site. This would completely eliminate these costs for the SLO.

5.3.24 Breach Analysis & Hazard Classification

The two Action Alternatives included in the final array would both provide long-term direct benefits in terms of breach likelihood and dam hazard classification whereas the No Action/FWOFI Alternative would introduce more risks and would not improve the dam's hazard classification.

Table 5-26: Breach Analysis Impact Comparison

Alternative	Breach Analysis Impacts
No Action/FWOFI	**Direct Permanent Impact**. Under the No Action/FWOFI Alternative, breach risk would increase over time and a failure would become imminent. It is reasonably foreseeable to assume that a breach/failure would occur under this alternative. The dam's hazard classification would remain and would not be improved prior to the failure.

Alternative	Breach Analysis Impacts
Structural Rehabilitation	**Direct Permanent Benefit**. Breach risk would be heavily reduced under this alternative as the dam is brought into compliance with NRCS and Utah State Dam Safety standards. This would result in net improvements to both breach risk and dam hazard classification.
Decommissioning	**Direct Permanent Benefit**. The removal/decommissioning of Utaba Dam would entirely eliminate breach risks and the need for an updated dam hazard classification.

Figure 5-1 and Figure 5-2 show the 100-year storm, max inundation impacts under the Structural Rehabilitation and Decommissioning Alternatives. The No Action/FWOFI Alternative is shown in Figure 3-14 in chapter 3. As can be seen, the Structural Rehabilitation Alternative would provide the greatest benefit/flood damage reduction of the three plans considered. Additional maps may be found in Appendix C and in the Flood Routing technical memo located in Appendix E.

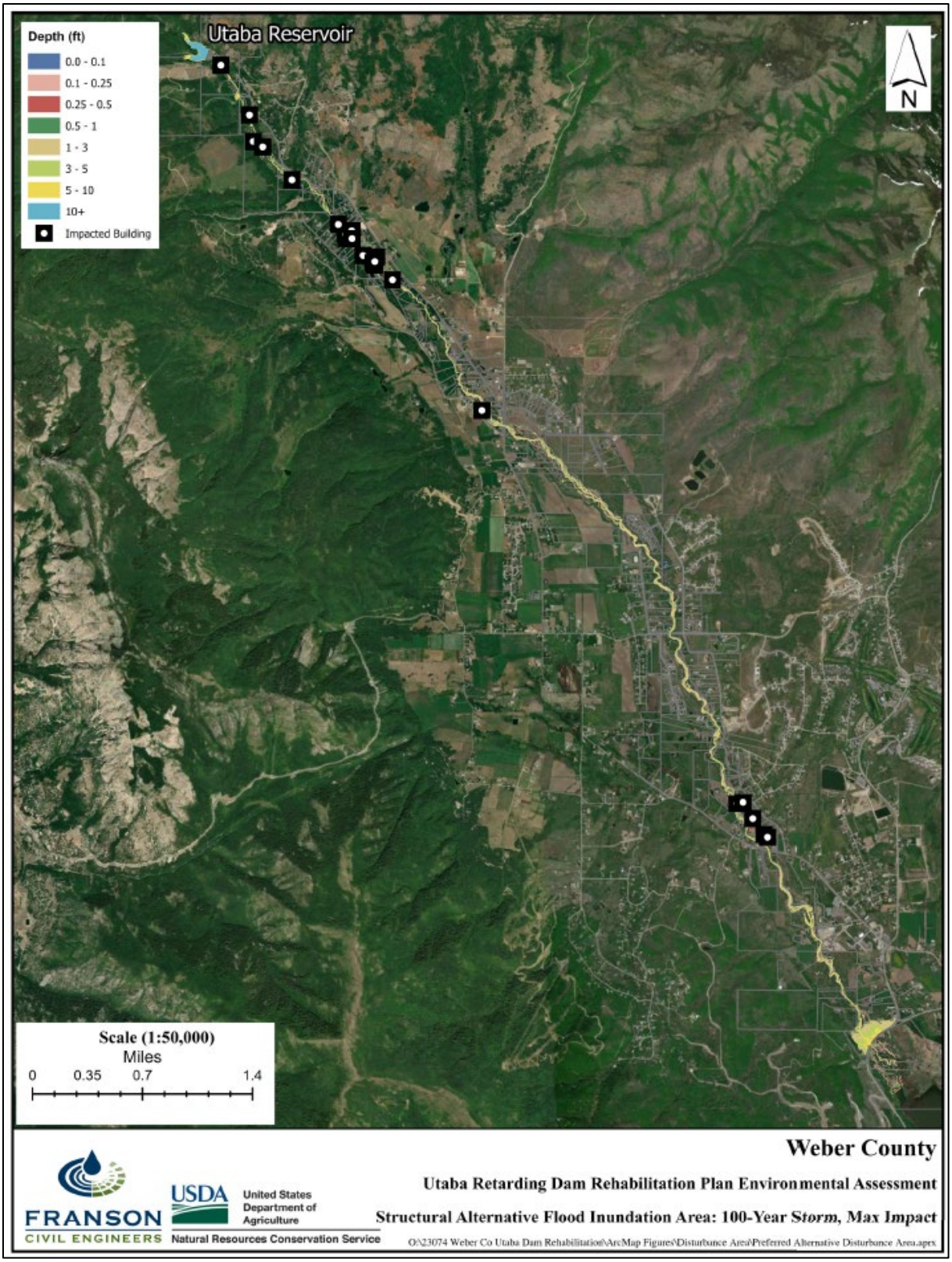

Figure 5-1: Structural Rehabilitation Alternative Flood Inundation Area, 100-Year Storm, Max Impact

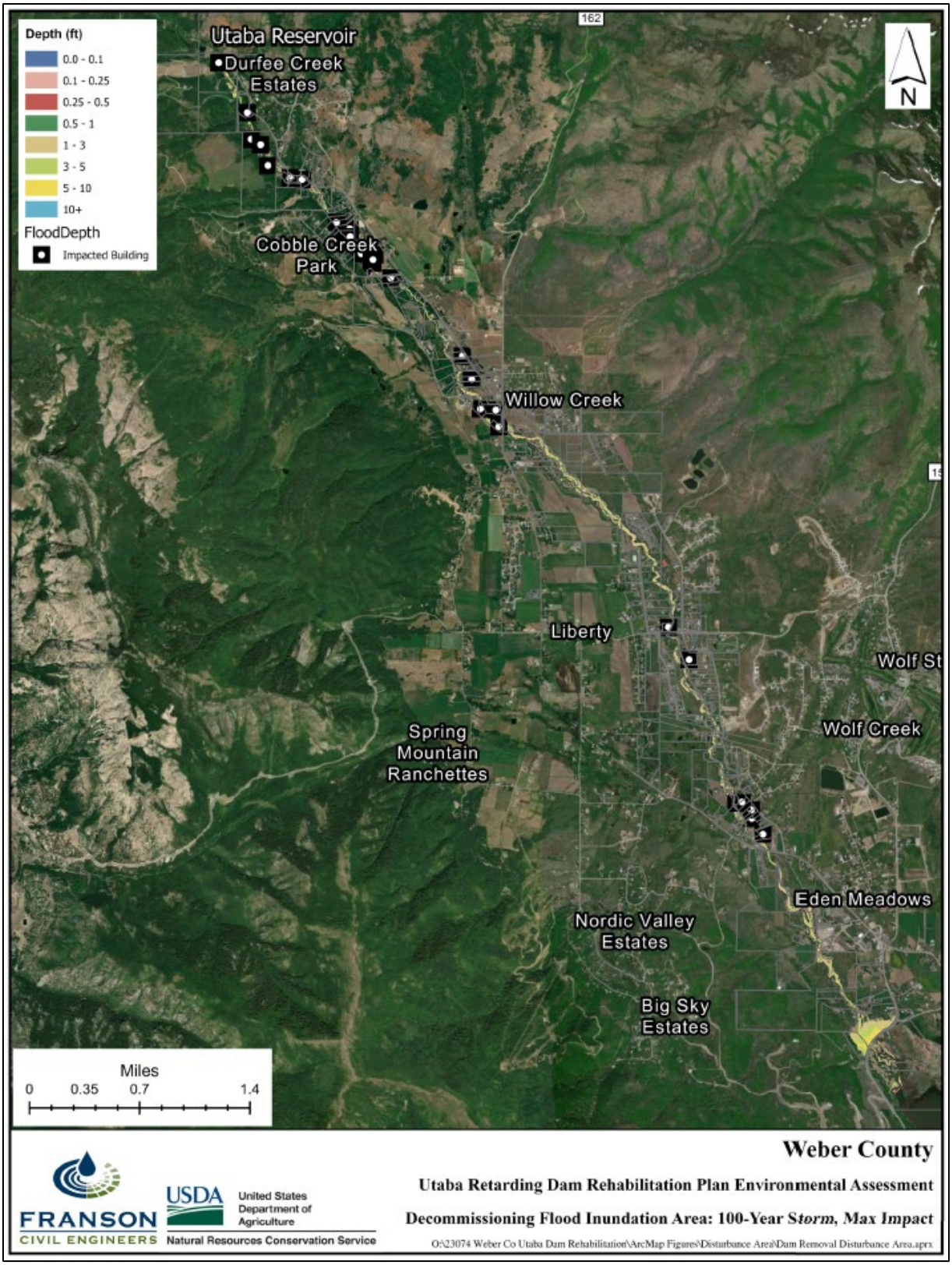

Figure 5-2: Decommissioning Alternative Flood Inundation Area, 100-Year Storm, Max Impact

5.3.25 Potential Modes of Dam Failure

Both the Structural Rehabilitation and Decommissioning Alternatives would improve the structural integrity or mitigate the number of ways that a dam failure could occur. The No Action/FWOFI Alternative would include an actual failure of the dam in one way or another and the modes by which it could occur would remain the same.

Table 5-27: Potential Modes of Dam Failure Impact Comparison

Alternative	Potential Modes of Dam Failure Impacts
No Action/FWOFI	**Direct Permanent Impact**. The existing modes of dam failure would only become more likely as conditions continue to deteriorate. The dam would remain out of compliance with NRCS and Utah State Dam Safety standards. A breach/failure is a reasonably foreseeable consequence of this alternative.
Structural Rehabilitation	**Direct Permanent Benefit**. Dam failure risks and the potential modes of failure are minimized through measures to improve structural integrity and bring the dam into compliance with NRCS and Utah State Dam Safety standards. A breach/failure is highly unlikely to occur following implementation of this alternative.
Decommissioning	**Direct Permanent Benefit**. Following implementation of the Decommissioning Alternative, it would be impossible for the dam to fail as no dam would exist. Dam failure would no longer constitute a concern.

5.3.26 Consequences of Dam Failure

The dam would fail under the No Action/FWOFI Alternative. Under the Structural Rehabilitation Alternative, it would be highly unlikely that the dam would fail in light of implemented improvements and compliance with criteria. It would be entirely impossible for the dam to fail under the Decommissioning Alternative.

Table 5-28: Potential Modes of Dam Failure Impact Comparison

Alternative	Potential Modes of Dam Failure Impacts
No Action/FWOFI	**Direct Permanent Impact**. The dam can be reasonably forecasted to fail under this alternative and would have various adverse effects and consequences on downstream residents, properties, and infrastructure. Depending on the severity of the breach, threats to life could be posed. There would be substantial environmental and economic repercussions of dam failure as well.
Structural Rehabilitation	**Direct Permanent Benefit**. The likelihood of a dam failure/breach occurring following the structural rehabilitation of the dam is extremely low as the dam would then be in compliance with NRCS and Utah State Dam Safety standards. The risks of failure would be minimized through improved structural integrity. However, under a rehabilitated dam, the consequences of dam failure would be significant.
Decommissioning	**Direct Permanent Benefit**. The removal of Utaba Dam would completely eliminate the possibility of a dam failure as there would no longer be a dam at the site, making a failure impossible.

5.3.27 Ecosystem Services

The effects of the alternatives on ecosystem services are covered in section 5.2of the Plan-EA and are summarized in the Ecosystem Services Worksheet located in Appendix E.

5.3.28 Summary and Comparison of Environmental Consequences

Table 5-29 below provides a side-by-side summary comparison of the environmental effects of the alternatives for each resource concern evaluated in this Plan-EA. In the sections above, the resource concerns have been evaluated for quantity, quality, duration, and significance (magnitude) of environmental effects. The table below seeks to summarize this information by identifying which alternative plan(s) are most beneficial and least beneficial to each resource concern. If a table cell is marked green (3), it indicates that that alternative is the most beneficial for that resource concern. If a table cell is marked yellow (2), it indicates that that alternative is the second most beneficial for that resource concern. If a table cell is marked red (1), it indicates that that alternative is the least beneficial for that resource concern. If alternative effects are co-equal among alternatives for a particular resource concern, each alternative will be marked as such.

Table 5-29: Summary and Comparison of Alternatives – Effects on Resource Concerns

Resource Concerns	No Action (FWOFI)	Structural Rehabilitation	Decommissioning (Nonstructural)
Soil-Related Concerns			
Geology	1	3	3
Soil Resources	1	3	2
Sedimentation Rates	1	3	2
Water-Related Concerns			
Surface Water Quality and Flow Characteristics	1	3	3
Groundwater	2	3	1
Floodplain Management	1	3	2
Wetlands and Waters of the United States	1	3	2
Air-Related Concerns			
Air Quality	3	1	1
Plant and Animal-Related Concerns			
Threatened and Endangered Botanical Species	1	3	2
Invasive Species and Noxious Weeds	3	1	1
Riparian Areas	1	2	3
Threatened and Endangered Animal Species	1	2	3
Fish and Wildlife/UNHP Species	1	3	3

Resource Concerns	No Action (FWOFI)	Structural Rehabilitation	Decommissioning (Nonstructural)
Migratory Birds and Eagles	1	3	3
Human-Related Concerns			
Socioeconomics	1	3	3
Land Use	2	3	1
Cultural and Historic Resources	1	3	2
Public Health and Safety	1	3	2
Scenic Beauty and Visual Resources	1	3	2
Parklands	1	3	2
Noise	3	1	1
Transportation Infrastructure	1	3	2
OM&R Status of the Dam	1	2	3
Breach Analysis/Hazard Classification	1	2	3
Potential Modes of Dam Failure	1	2	3
Ecosystem Services	1	3	2
TOTAL RESOURCES MOST BENEFICIAL	**3**	**17**	**10**
TOTAL SCORE	**34**	**67**	**57**

As shown in Table 5-29, the Structural Rehabilitation Alternative would be the most beneficial alternative overall, being the most preferable option for 17/26 resource concerns and with an overall score of 67 out of a maximum of 78. The second preferable option would be the Decommissioning Alternative (Nonstructural) (10/26, overall score 57) because it would still address the problems and opportunities in the watershed and meet the NEPA Purpose and Need. The least preferable option would not meet the Purpose and Need or address the problems and opportunities, the No Action/FWOFI Alternative (3/26, overall score 34).

5.3.29 Reasonably Foreseeable Effects Analysis

NRCS analyzed the potential for significant and adverse cumulative effects in addition to the resource-specific evaluations described in the previous sections as described in 501.43(3)(b)(1). Reasonably foreseeable effects include all the past, present, and future activities within the watershed that could impact resources affected by the project. These effects can result from individually minor but collectively significant actions taking place over a period of time. The focus of a reasonably foreseeable effects analysis is on whether the Proposed Action(s) will have any effects when combined with any known or foreseeable action by NRCS, other agencies, or any other entities. There is no defined area for reasonably foreseeable effects.

5.3.29.1 Methodology

NRCS searched agency websites and contacted agency/organization staff to identify past, present, and future projects with the potential to have effects in combination with the Proposed Action. The following agencies and entities, which have some claim to a project or lands within or near the watershed, are listed below with a description of past and current projects which have the potential to contribute to effects which the actions of this project could, in combination, have significant adverse impacts.

Projects located outside of the study area/target watershed were evaluated for cumulative effects to (1) adhere to the PR&G Guiding Principle of utilizing a watershed-scale approach and, (2) to acknowledge that this project, if implemented, will not occur in isolation but rather in the context of all the other planned/ongoing projects in the surrounding areas.

NATURAL RESOURCES CONSERVATION SERVICE (NRCS)

- North Fork Ogden River Supplemental Watershed Plan-EA (PL-566, ongoing)
- Upper Weber Basin Watershed Plan-EA (PL-566, ongoing)
- Various EQIP projects (ongoing)

UNITED STATES FOREST SERVICE (USFS)

- Beaver Dam Analog Installation on Weber River (Trout Unlimited USFS Keystone Agreement) (completed 2024)
- Upper Weber Watershed Improvement Project (EA completed 2024)
- Pineview Reservoir Recreation Complex Reconstruction (ongoing)

UNITED STATES BUREAU OF RECLAMATION (USBR)

- Layton Canal Solar Panel Project (ongoing)
- Great Salt Lake Water Delivery & Ecosystem Improvement Funding (ongoing)
- Reclamation's Weber Basin Project (completed)

WEBER COUNTY

- Weber County Great Salt Lake Industrial Port Project (ongoing)
- West Weber Project Area Plan and Wetland Strategy (ongoing)

OGDEN CITY

- OBE Surf Wave Fish Passage Project (with USBR) (ongoing)
- Ogden Wellfield and Canyon 36-Inch Water Line Replacement (with EPA) (ongoing)
- Ogden City Water Pipeline Replacement (ongoing)

LIBERTY AND EDEN

- 2023 Liberty Pipeline Company Transmission Line & Booster Pump Station (ongoing)
- Ogden Valley Water Conservation & Reuse Initiative – Eden (completed)

CAMP UTABA

- New gazebo for Camp UTABA (completed 2024)
- Refurbished lodge, footbridge, painted cabins, tent (completed 2023)

UTAH DEPARTMENT OF NATURAL RESOURCES (UDNR)

- Causey Reservoir Boat Ramp Upgrades (ongoing) (funded with USFWS)

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY (UDEQ)

- American Rescue Plan Act Funding for West Weber Site Sewer (completed)

UTAH WATERSHED RESTORATION INITIATIVE (WRI)

- Weber River Watershed Restoration and Forest Resilience (FY2024) (completed)
- Phragmites and Invasive Weed Control (FY2023) (completed)
- Weber River Headwaters Resilience (FY2025) (ongoing) (funded with USFWS)

5.3.29.2 Findings of Reasonably Foreseeable Effects Analysis

NRCS reviewed the potential for there to be additive or interactive effects from the Proposed Action(s) in combination with the projects listed above. Effects on various resources are anticipated as a result of the Proposed Action (as described above) and the previously listed projects; however, none of these resources would be affected adversely by the Proposed Actions past the short-term temporary adverse impacts during construction which would not be additive or interactive. No reasonably foreseeable effects would occur as a result of this project. This is further supported by the fact that the study area is a relatively small area in the context of the entire watershed and effects would not be great enough under the alternatives to extend to the entire watershed/county.

6.0 Preferred Alternative

The NRCS's Proposed Action (Preferred Alternative) is Alternative 2 – Proposed Action – Structural Rehabilitation Alternative. The following subsections provide details on the Structural Rehabilitation Alternative in terms of its selection rationale, specific component measures, associated irreversible or irretrievable commitment of resources, potential areas of controversy, necessary permits and compliance efforts, including mitigation measures, costs and cost-sharing, ecosystem service benefits, installation and financing, and required operations and maintenance (O&M).

6.1 Rationale for the Preferred Alternative

The Structural Rehabilitation Alternative was selected as the Preferred Alternative due to its ability to meet the NEPA Purpose and Need, to address the problems and opportunities, meet the Federal Objective and project objectives, and to maximize net public benefits with appropriate consideration of costs above that of the No Action (FWOFI) Alternative and Decommissioning Alternative.

The Structural Rehabilitation Alternative was developed in collaboration and coordination with the local sponsor to address the issues related to compliance with NRCS and Utah State Dam Safety standards. NRCS and the sponsor developed and screened a variety of candidate management measures to address the problem and its associated deficiencies through structural and nonstructural measures before ultimately arriving at the measures included in the Structural Rehabilitation Alternative.

The environmental consequences, or impacts, both adverse and beneficial, of the Structural Rehabilitation Alternative were analyzed under an ecosystem services framework (described in chapter 1) to better understand the alternative's contribution to net public benefits.

The Structural Rehabilitation Alternative supports the purpose of PL 83-566 as it would bring Utaba Dam into compliance with safety standards and significantly reduce the risk of a breach. It minimizes all the established project planning constraints including minimization of adverse impacts to federally listed species, minimization of adverse impacts to cultural and historic sites, avoidance of real property acquisition challenges, avoidance of adverse impacts to Camp UTABA, and maintenance of existing recreational facilities in the project area to the maximum extent practicable.

The estimated cost of the Project is $6,204,000, of which $4,303,300 would be PL 83-566 funds, and the estimated installation period is two years.

6.2 Measures to be Installed

The following measures would be implemented under the Preferred Alternative to address the problems and opportunities at Utaba Dam:

- Abandon and Replace the Principal Spillway
- Replace the Existing Auxiliary Spillway with a New Auxiliary Spillway – Left Abutment
- Widen the Crest by Adding Material Downstream to Comply with NRCS and Utah Dam Safety standards

- Request a Variance to NRCS and Utah Dam Safety standards to Allow a Narrower Minimum Crest Width with Additional Freeboard.
- Address Seepage with Downstream Filter and Drain System – Principal Spillway Outlet Conduit
- Address Seepage with Downstream Filter and Drain System – Toe of the Dam
- Rehabilitate the Spillways to Prevent Long-Term Water Storage
- Install a Chimney and Blanket Filter and Drain System
- Remove 100 cubic yards of Accumulated Sediment from the Reservoir.
- Replace the Principal Spillway to Reduce the Rate of Sediment Accumulation
- Install a Control Gate to Detain Water for Wildland Fire Suppression
- Install a Measurement Gage Upstream of the Dam Along the North Fork of Ogden River
- Install a Measurement Gage Upstream of the Dam Along Cutler Creek

6.3 Irreversible or Irretrievable Commitment of Resources

Irreversible effects are those caused by the Preferred Alternative that cannot be reversed and are considered permanent. Irretrievable effects are gains and losses of outputs such as land use and may occur in the short-term or the long-term.

The Preferred Alternative would have several irreversible effects. Most importantly, the dam would be permanently modified. It would not be possible to return it to its previous state. Any material/sediment removed and placed in a borrow area would not be able to be returned to the dam. Additionally, effects to wetlands would be irreversible and, although compensatory mitigation would take place, it would not be able to recreate the exact same wetland conditions.

The Preferred Alternative would have two irretrievable resources. The first would be the use of construction equipment and materials in the form of labor and fossil fuels. The use of these resources is typically understood to be irretrievable. Additionally, the use of project financial resources is irretrievable in the short-term but should be supported in the long-term via the benefits of alternative implementation.

6.4 Areas of Controversy

No areas of controversy have been identified related to the Preferred Alternative. No comments of opposition to the project were received during the 30-day public review period, and no new issues of concern were raised.

6.5 Permits and Compliance

Prior to construction of the proposed project measures, during construction, and in some cases, following construction, the following permits or authorizations will be required:

- **Stream Alteration Permit:** Section 73-3-29 of the Utah Code requires any person, governmental agency, or other organization wishing to alter the bed or banks of a natural stream to obtain written authorization from the State Engineer prior to beginning work.
- **Floodplain Disturbance Permits:** Under FEMA rules and regulations, each local regulation agency is required to implement a floodplain disturbance permit.
- **Construction Water Discharge Permits:** When construction dewatering is required that will discharge to Waters of the United States (WOTUS), wetlands, or ditches, or other

possible waterways, a construction water discharge permit will be required from the Utah Division of Water Quality.

- **Building Permits (For Structures):** All constructed structures of the project will be required to comply with the international building code (IBC) and international electrical code (IEC). These will require inspection by the Weber County building inspector and will require the appropriate building permits.
- **Utah Pollutant Discharge Elimination System (UPDES):** Construction activities that disturb more than one acre of land require a SWPPP to comply with the UPDES permit. BMPs must be in place to prevent sedimentation or other impacts to water quality in the project area. This permit process requires an NOI, NOT, and regular inspections by the contractor's storm water inspector as well as an inspector of the agency responsible for compliance (hhtps://deq.utah.giv/water-quality/storm-water-permits-updes-permits).
- **USACE:** This project would require compliance with Sections 401, 402, and 404 of the Clean Water Act. The wetlands in the study area will require consultation with the U.S. Army Corps of Engineers and may require mitigation. While significant efforts have been taken to minimize disturbances to the environment according to the principles of LEDPA, there are some impacts that will still require some permitting. It is expected that most of these disturbances will be covered by the Nationwide Permit 58. However, due to the current status of the definition of jurisdictional wetlands, the governing regulations for the USACE, combined with new Supreme Court rulings such as the 2023 decision in *Sackett v. EPA,* it is always necessary to coordinate with the USACE during design prior to construction bidding to determine mitigation requirements. Consultation will continue during design.
- **Utah SHPO:** In compliance with Section 106 of the NHPA, the Utah SHPO were involved in consultation for the project.
- **Endangered Species Act Section 7 Clearance:** Per the ESA Section 7, all impacts of the project on federally-listed plant and animal species will be evaluated and, if present, mitigated using conservation measures outlined in a Biological Assessment (BA). Should either a No Effect or May Affect Not Likely to Adversely Affect (MANLAA) be made, the USFWS will provide concurrence on the BA. If an adverse effects determination is made for any species, the USFWS will prepare a Biological Opinion (BO).
- **Work in the Right of Way Permits:** Whenever work is completed within the right of way of a public agency including a city, county, or state, a work in the right of way, or an encroachment permit is required. A permit for these construction activities will be required from Weber County.
- **Utah Division of Water Rights Change Application:** A water rights change application may be required to allow for some storage of water in Utaba Reservoir. Additional coordination with the Utah Division of Water Rights may occur as needed during final design and implementation.
- **Special Use Permits or Special Condition Permits:** Within Weber County, special permits that are required for the construction of projects must be obtained prior to beginning construction.
- **Easements:** Easements from private and public landowners would be obtained prior to construction. Utility easement encroachment permits would also be acquired from local utility companies where necessary.

Permitting costs are ineligible for cost-sharing under PL 83-566. The SLO is responsible for obtaining and complying with any permits or regulations.

6.6 Mitigation of Potential Effects

The following subsections will address impacts associated with the Preferred Alternative relative to specific resources and will describe the measures and management practices which would be implemented under the alternative to provide avoidance, minimization, and mitigation if necessary.

6.6.1 Geology

There would not be any adverse impacts to the underlying rock or seismic conditions at the site. There would be direct benefits to the seismic and static stability of the dam as a result of project measures. Therefore, no BMPs or other management measures will be implemented relative to this resource concern.

6.6.2 Soil Resources

Although there would be benefits to soil conditions following construction (i.e., embankment protection), there is the potential for temporary impacts during construction resulting from the use of heavy machinery. Construction equipment would temporarily increase soil erosion while earth-moving activities were ongoing. BMPs would be implemented to minimize the effect of project activities on erosion in the study area, including but not limited to:

- Since the area of disturbance is greater than 1.0 acre, a Stormwater Pollution Prevention Plan (SWPPP) is required under the Utah Pollution Discharge Elimination System (UPDES). The SWPPP would be prepared in compliance with Section 402 of the Clean Water Act (CWA) and would describe the measures to avoid, minimize, and mitigate erosion and prevent soils from leaving the site during and after construction until the site is stabilized.
- With the required SWPPP, a Notice of Intent (NOI) would be required from the State of Utah before ground disturbance could be initiated.
- Suitable erosion control measures such as the use of straw waddles, dikes, silt fences, vegetative barriers, compost socks, and/or other BMPs approved under the design criteria would be utilized. Straw bales would not be allowed in an effort to prevent the spread of invasive plant species and/or noxious weeds.
- Topsoil preservation and revegetation would be required as part of the SWPPP.
- Revegetation would be consistent with the surroundings with native seeds, seedlings, bare root starts, and pole plantings being used in disturbed areas and dam-compatible vegetation used on the embankment.
- Tracking pads would be used at the access points to all public roads from construction easements and staging areas to minimize the movement of soils.
- Regular SWPPP inspections using EPA and UDWQ compliant forms would be used to monitor compliance with the SWPPP and stormwater rules in compliance with the UPDES General Construction Permits.

6.6.3 Sedimentation Rates

Similar temporary construction impacts as with soil resources would occur in relation to sedimentation rates. Ground disturbance would be avoided to the extent practicable and topsoil

preservation and restoration efforts would be included as a component of the SWPPP. The restoration efforts would include a restoration of North Fork Park, which would be used as a storage/borrow area for construction. Potentially, sediment removed from the dam would be placed in North Fork Park prior to restoration.

6.6.4 Water Resources (Surface & Groundwater Quality & Quantity)

BMPs would be implemented to mitigate and reduce impacts on surface and groundwater quality and quantity during and after construction such as:

- Provide sanitation facilities for construction workers to prevent the contamination of the area with nitrates, phosphates, *Escherichia Coli* (*E. Coli*), and other water-borne pathogens.
- Ensure the SWPPP addresses the use of petroleum products and other potentially hazardous materials including their proper storage and disposal in accordance with UPDES requirements. This includes the availability of spill kits at all fueling sites, on all fueling trucks, and on crew trucks.
- Designated concrete wash-out facilities would be used away from other water bodies for all concrete clean-up operations and at approved locations designated in the SWPPP. Concrete remnants would be legally disposed of off-site upon completion of all concrete operations.
- A Dust Control Plan would be required to be developed as a component of the SWPPP to mitigate water quality impacts generated from dust in the air settling into surface waterbodies.

6.6.5 Floodplain Management

BMPs would be implemented to ensure there are no impacts to floodplain functionality during and after construction by:

- Ensuring that the SWPPP includes the appropriate BMPs to provide for sediment traps, sediment pond, or intercepting channels, and containment facilities to capture and remove sediment before it can enter a natural or man-made regulated water body.
- Topsoil preservation and revegetation would be required as a part of the SWPPP.
- Regular inspections using EPA and UDWQ compliant forms would be used to monitor compliance with the SWPPP and stormwater rules in compliance with the UPDES general construction permits.
- A Conditional Letter of Map Revision (CLOMR) would be obtained prior to construction.
- A Letter of Map Revision (LOMR) would be obtained following construction.
- Coordination with the local Floodplain Administrator and FEMA would occur as necessary during final design and implementation, including evaluation of any required floodplain development permits or LOMRs.

6.6.6 Wetlands and Waters of the United States (WOTUS)

BMPs would be implemented to mitigate and reduce impacts to affected wetlands and jurisdictional WOTUS within the project area during and after construction by:

- Consultation with the U.S. Army Corps of Engineers (USACE) regarding compliance with Section 404 of the CWA. Permits would be finalized prior to construction. Jurisdictional

wetlands would be fenced off with construction fencing to protect them during construction (other than the wetlands that would need to be disturbed as a part of construction).
- Appropriate BMPs such as filter strips, waddles, and silt fences would be placed to protect the wetlands that are not to be disturbed from impacts within the construction and staging areas.
- It is likely that a Nationwide Permit (NWP) for Section 404 would be required. Although the final decision on which permit would be needed would be determined by the USACE in consultation, it is likely that either NWP 3 (Maintenance) or NWP 7 (Outfall Structures and Associated Intake Structures) would be applicable.
- Because wetland disturbance would exceed 0.10 acres in extent, compensatory wetland mitigation would need to occur at a ratio established by the USACE during Section 404 consultation and permitting. Compensatory mitigation may include participation in an approved In-Lieu Fee mitigation program, subject to USACE approval.

6.6.7 Air Quality & GHG Emissions

BMPs would be followed to mitigate temporary impacts on air quality as a result of construction related activities, including but not limited to:

- Since the area of disturbance is greater than 1.0 acre, a SWPPP is required under the UPDES.
- As part of the SWPPP, a Dust Control Plan would be required. These would include, but would not be limited to the application of dust suppressants and watering to control fugitive dust, minimizing the extent of disturbed surfaces during times of high wind, installing tracking pads at all accesses to roadways, removing tracked-out materials deposited onto adjacent roadways, establishing vegetative cover on bare ground as soon as possible following disturbance to reduce wind-blown dust, requiring appropriate emission-control devices on all construction equipment, using only properly operating and well-maintained construction equipment, limiting earthwork activities, and controlling traveling speeds on unimproved road surfaces.

6.6.8 Threatened and Endangered Botanical Species

Although there would be No Effect on the Ute Ladies'-tresses (ULT) under the Preferred Alternative, BMPs would be implemented to mitigate and reduce negative impacts during and after construction, including but not limited to:

- Limit ground disturbance to only the area(s) necessary to safely implement the Preferred Alternative.
- Construction limits would be flagged onsite to avoid unnecessary plant loss, ground disturbance, or soil compaction.
- Ensure that contractors and project managers can identify the ULT that may occur in the project area even through the area that was determined to be inappropriate habitat. If a ULT individual was discovered, work would stop.
- If ULTs are identified during pre-construction surveys in or adjacent to the construction corridor, protection of the plant(s) would be prioritized.

6.6.9 Invasive Species and Noxious Weeds

BMPs would be implemented to minimize and mitigate adverse impacts during and after construction, including but not limited to:

- Limit ground disturbance to only the areas necessary to safely implement the Preferred Alternative. Construction limits would be flagged onsite to avoid unnecessary plant loss or ground disturbance.
- Weed control would be carried out in all disturbed areas and a special emphasis would be placed on invasive or noxious species.
- The disturbed area would be reclaimed using native topsoil, native seeds, and replacing organic matter.
- Upon completion of work, decontamination would be performed within the work area before the vehicle and/or equipment would be removed from the project site.
- The disturbed areas would be seeded at appropriate times with weed-free, native seed mixes (except in previously non-natively vegetated areas) consisting of a variety of appropriate seeds to promote the revegetation of the disturbed areas.
- Weed control measures would be implemented to county and state standards, at a minimum.
- Maintain disturbed areas on a regular basis to prevent the establishment of noxious weeds and/or invasive botanical species.
- Clean equipment prior to delivery to the project site, eradication of noxious weeds/invasive species before the start of and during construction as discovered, and routine monitoring after construction completion. There would be a mandatory inspection of all construction equipment before it arrives on site. This would ensure that any invasive/noxious plant species would be removed prior to construction activities actually starting.

6.6.10 Riparian Areas

Disturbed riparian areas would be reseeded and revegetated per the requirements of the mandatory SWPPP that is required for construction to occur. Vegetation restoration monitoring would occur as described in section 6.6.9.

6.6.11 Threatened and Endangered Animal Species, Utah Special Status Animal Species, Fish and Wildlife, and Migratory Birds/Eagles

BMPs would be implemented to minimize the effect of project activities on fish, wildlife, migratory birds/eagles, and other protected species with mapped habitats within the study area including USFWS T&E species (Western Yellow-billed Cuckoo) and/or Utah State Special Status Species, including but not limited to:

- Limit ground disturbance to only areas necessary to safely implement the Preferred Alternative.
- Restricting construction activities to avoid sensitive breeding/nesting season where practicable if potential habitat is identified during pre-construction screenings.
- Existing roadways and maintenance routes would be used where available to reduce habitat disruption.
- Disturbed vegetation within animal habitat would be restored as close as possible to pre-construction conditions upon completion of the project using native vegetation.

- If a protection species individual is identified during pre-construction surveys in or adjacent to the construction corridor, protection of the animal would be prioritized.
- If construction activities occurred in the late spring/early summer or any time active breeding, nesting, or pre-fledging behavioral activities occur, appropriate buffers should be put in place to protect nests according to the USFWS Utah Raptor Guidelines until fledging activities conclude. The presence or absence of any birds and their potential for pre-fledging behavior in the area was determined in the Biological Assessment (BA), located in Appendix E.
- At a minimum, state and local requirements for construction noise/vibration impacts would be followed.
- Noise mufflers would be used on heavy equipment to limit noise exposure to any animal species that are in the study area.
- Construction would be limited to daytime hours to the maximum extent practicable when increased noise and vibration levels are more tolerable and storing equipment away from areas of suitable WYBC habitat.

6.6.12 Land Use

Revegetation and reseeding following construction would occur as outlined in the mandatory SWPPP for construction. Weber County has committed to restore North Fork Park, which would be used as an access, staging, storage, and borrow area during construction as close to pre-construction conditions as practicable.

6.6.13 Cultural and Historic Resources

Mitigation measures would be employed through law, regulation, and policy to minimize the effect of project activities on cultural and historic properties, including but not limited to:

- Treating all affected historic sites within the project area in compliance with the NHPA. If any cultural resources other than those previously identified in this document are discovered on the surface or below the surface prior to or during construction, construction in the area of the inadvertent discovery would cease until an assessment of the resource as well as a recommendation for further work can be made by a professional archaeologist. Detailed procedures for post-review discoveries as described in the State Prototype Programmatic Agreement with the Utah SHPO would be followed.

6.6.14 Public Health and Safety

BMPs would be employed to minimize the effect of project activities on public health and safety, including but not limited to:

- Construction sites would be closed to public access.
- All construction would be completed in compliance with federal safety laws, rules, and regulations governed by the Occupational Safety and Health Administration (OSHA).
- All traffic control would be in compliance with the Manual on Uniform Traffic Control Devices (MUTCD) (most recent editions). Flaggers would be used where beneficial and required for safety.
- Noise and dust control measures would be employed to minimize disturbances to the public.

- Additional long-term safety measures would be considered during the design process to reduce the risk of drowning/falls in the spillways. These measures could include, but are not limited to, fencing, grates/coverings over the spillway, or other appropriate measures.

6.6.15 Scenic Beauty and Visual Resources

BMPs would be employed to minimize the effect of project activities on scenic and aesthetic resources in the project area, including but not limited to:

- Noise control measures would be employed to minimize effects to the public.
- Implementation of construction-related and visual resource-specific BMPs would coincide with the Dust Control Plan, Erosion Control Plan, and the Vegetative Restoration Plans included in the SWPPP.
- The public would not be allowed to access the project area while construction is ongoing. This would prevent any major barriers to scenic viewsheds by limiting physical access to the project site. Of course, there would be unavoidable aesthetic impacts in the short-term as heavy equipment cannot be removed from view without extraordinary effort.

6.6.16 Noise

BMPs for noise disturbance to wildlife/animals and local residents would be employed as described in sections 6.6.11and 6.6.14.

6.6.17 Transportation Infrastructure

BMPs would be employed to minimize the effect of project activities on transportation corridors within the project area, including but not limited to:

- All traffic control would be following the MUTCD (most recent edition). Flaggers would be used where beneficial and required for public safety.
- The public would not be allowed to access any existing transportation corridors normally available on the site. This would temporarily impact transportation corridors in order to protect public health and safety.

6.6.18 Ecosystem Services

Benefits and impacts to the ecosystem services in the study area are discussed in section 6.8.

6.7 Costs and Cost-Sharing

Project construction implementation costs are broken down below into PL-566 program categories as shown in Table 6-1. Technical and Administrative Costs are not included in these costs. See Appendix D for additional breakdowns of cost estimates.

Table 6-1: Summary of Construction Costs for the Preferred Alternative

Category	Construction
Structural Rehabilitation Alternative	$5,002,000
Total	**$5,002,000**

These construction costs are anticipated to be shared by several entities and funding programs. See Table 6-2 for cost-share details. Table 6-2 includes all costs associated with the project including administrative, permitting, etc.

Table 6-2: Estimated Installation Cost Share

Category	NRCS Funding	Estimated Costs (Dollars)		
		Cost Share – PL 83-566	Cost Share – Other Funds	
		Federal	Federal	Non-Federal
Structural Rehabilitation Alternative	65%	$4,303,300	$0	$1,900,700
Subtotal		**$4,303,300**	**$0**	**$1,900,700**

6.8 Ecosystem Services Benefits

The Preferred Alternative would impact the provision of ecosystem services in the project area in the following ways:

6.8.1 Provisioning Services

Drinking Water Quality: The Preferred Alternative would continue to allow water to pass through the reservoir following construction. The water that passes through the reservoir would continue to provide water to Pineview Reservoir downstream, which is used for drinking water. Turbidity measurements at Pineview Reservoir could be used as a quantitative measure of this service's change.

Food Production/Irrigation Water: The water which would continue to pass through the reservoir is used for both drinking and irrigation water once reaching Pineview Reservoir. The reservoir is expected to continue to contribute the same quantity of water annually to Pineview Reservoir to be used for drinking water and irrigation.

Downstream Fish Population: There would be no expected change in fish populations downstream of Utaba Dam as a result of the implementation of the Preferred Alternative. The

breach risk reduction provided by the project would protect downstream fish populations from the adverse effects of a dam breach (i.e., sedimentation).

6.8.2 Regulating Services

Flood Prevention/Public Safety: The Preferred Alternative would provide approximately $893,358 in annual flood damage reduction benefits. The ability of the dam to serve as a critical buffer against environmental catastrophe would be significantly improved. Public safety conditions in the area would be significantly improved through the implementation of the Preferred Alternative.

Floodwater Detention/Fire Suppression: Implementation of the Preferred Alternative would increase the floodwater detention capacity of Utaba Dam. This increase in capacity would allow the Dam to make additional use as a local wildfire suppression resource.

6.8.3 Cultural Services

Cultural/Spiritual Experiences from Youth Camps: The various youth camps located near Utaba Dam, including Camp UTABA, would remain available for cultural and religious use for the entire life of the rehabilitated dam (50 years). The threat of a dam breach would be significantly reduced, and the camps would receive increased protection.

Aesthetic Value: The dam would be enlarged, and the spillway would be removed under the Preferred Alternative. However, these actions would not significantly impact the aesthetic quality of the study area. The North Fork Park would continue to be designated as a dark sky park and the viewshed would be mostly unaltered.

Recreational Experiences: The North Fork Park would be utilized as a borrow area during construction of the Preferred Alternative. However, Weber County would restore the park following construction, maintaining the current recreational opportunities at the park post-construction. Other recreational opportunities in the study area would only be interrupted temporarily during implementation and would be maintained following project completion.

Existence Value of Yellow-billed Cuckoo Habitat: The Preferred Alternative would not disturb or remove any existing suitable habitat for the Western Yellow-Billed Cuckoo. The amount of WYBC habitat in the study area and within a 0.5 mile buffer of the study area would remain in current conditions.

6.8.4 Incidental Ecosystem Services Benefits

Water Quality/Filtration Regulating Service via Riparian Vegetation Presence: There would be no change in the ability of riparian and aquatic vegetation in the area to improve water quality through filtration and nutrient cycling. This incidental ecosystem service (meaning it isn't directly tied to the problems/opportunities) would not change in its provision under the Preferred Alternative.

6.8.5 Summary

The Preferred Alternative is expected to improve conditions related to all PR&G Guiding Principles: Healthy and Resilient Ecosystems, Sustainable Economic Development, Floodplains, Public Safety, and Watershed Approach.

6.9 Installation and Financing

The following subsections present the details regarding the installation and financing of the Preferred Alternative. Much of the data provided in these sections is based on (and pulled from) the Economic Analysis Report dated June 2025. A full copy of this report is available in Appendix E.

6.9.1 Installation

The SLO would obtain all approvals and permits for the project prior to the start of construction. During design, a project permit checklist would be created with a tracking process to ensure all permits are complied with accordingly. The entire project would be designed (one year) and constructed/installed (one year) over a 2-year period commencing in 2026 and ending in 2028. The sponsors developed an appropriate design and construction phasing schedule that focused on sequencing of the project based on maintaining the economic viability of the co-sponsors and individuals during construction, protects the environment and ecosystem, and minimizes risks (Table 6-3).

Table 6-3: Construction Timeline and Installation Costs by Funding Source for the Preferred Alternative, Utaba Dam Rehabilitation, 2025

Project Year	PL 83-566 Non-Construction Funds	PL 83-566 Construction Funds	Other, Non-Federal Non-Construction Funds	Other, Non-Federal Construction Funds	Total Installation Costs
1	$526,000	$0	$75,000	$0	$601,000
2	$526,000	$3,251,300	$75,000	$1,750,700	$5,603,000
Total Project	**$1,052,000**	**$3,251,300**	**$150,000**	**$1,750,700**	**$6,204,000**

6.9.2 Responsibilities

NRCS is responsible for leading the planning efforts, providing engineering design and construction oversight assistance, and certifying project completion. The SLO is responsible for engineering design, project administration, environmental permitting, contracting, and construction implementation. The SLO has the needed authority as a county in the State of Utah and has agreed to exercise those authorities to implement the actions described in this Supplemental Plan-EA.

6.9.3 Contracting

Implementing the Preferred Alternative would be completed using NRCS funding mechanisms. The SLO would be primarily responsible for overseeing and administering project construction in coordination with the NRCS.

6.9.4 Real Property Rights

Real property acquisition or relocation would not be required for the Preferred Alternative. All construction would be completed either in existing right of way (ROW) or in easements that have been obtained from project participants.

6.10 Operation, Maintenance, and Replacement

The SLO would be responsible for the Operation and Maintenance (O&M) of the dam for the extent of its design life, as well as any associated replacement (R) costs and activities that could occur. Prior to construction, a separate OM&R agreement based on NRCS's Operation and Maintenance Manual would be made between NRCS and the SLO. The agreement would continue through the design life of the project and could be modified with NRCS's approval as appropriate. The Dam Rehabilitation Design Technical Memo, located in Appendix E, provides additional details on the OM&R costs associated with the alternatives. Any future automated operational systems associated with the rehabilitated structure would be managed in accordance with applicable state and local operational security requirements. OM&R costs have been estimated in Appendix D and Table 6-4 provided below. See Appendix D or the Dam Rehabilitation Design Technical Memo (Appendix E) for additional details on assumptions and line items.

Table 6-4: Operation, Maintenance, and Replacement Costs Summary

Category	Estimated Preferred Alternative Annual Cost
Structural Rehabilitation Alternative	$8,559.00
Total	**$8,559.00**

6.11 Emergency Action Plan

The existing Emergency Action Plan (EAP) for Utaba Dam was prepared in February 2011. The SLO will prepare an updated EAP following the completion of project design. The EAP shall be prepared as a standalone document that outlines potential modes of catastrophic dam failure and the steps to address the issues associated with each dam failure scenario. The SLO shall review and update the EAP annually to include a local points of contact necessary for an emergency response and shall ensure consistency with the project.

6.12 Economic Tables and Structural Tables

A summary of the incremental economic analysis of the Preferred Alternative (NEE Alternative and Future with Federal Funding) and the No Action Alternative (FWOFI Alternative) is provided in chapter 4. The Full NEE Analysis is provided in Appendix D and the economist's I&A report in Appendix E. Table 6-5 is a structural table comparing the as-built and existing conditions at Utaba Dam. Table 6-6 (NWPM 506.11, Economic Table 1) and Table 6-7 (NWPM 506.12, Economic Table 2) present the proportion of PL 83-566 funding and other funding sources for construction and supporting technical services. The average annual NEE costs are shown in Table 6-7 and Table 6-8 (NWPM 506.18, Economic Table 4a). The costs shown are the annual costs for the Preferred Alternative above the No Action Alternative, which is discussed further in Appendix D. Table 6-9 (NWPM 506.20, Economic Table 5a) presents the average annual damage reduction benefits separated into the agricultural and the non-agricultural damage reductions. Using the resulting benefits and cost from Table 6-8, Table 6-9, and Table 6-10 (NWPM 506.21, Economic Table 6) present a comparison of the NEE average annual benefits and average annual costs.

Table 6-5: As-Built and Existing Structural Data for Utaba Dam

Utaba Dam	As-Built (1962)	Existing (2024)
Local Name	Utaba Dam	Utaba Dam
Year Completed	1962	1962
Cost	$802,707.00	--
Purpose(s)	Flood Protection	Flood Protection
	Sediment Storage	Sediment Storage
Drainage Area, square miles	9.6 square miles	9.6 square miles
Dam Type	Zoned Earth Fill	Zoned Earth Fill
Dam Height, feet	71 Feet	71 Feet
Dam Crest Length, feet	~320 Feet	~320 Feet
Floodwater, acre-feet	47 Acre-Feet	47 Acre-Feet
Sediment Capacity, acre-feet	90 Acre-Feet	~57 Acre-Feet
Total Capacity, acre-feet	137 Acre-Feet	~104 Acre-Feet
Principal Spillway		
Type	Reinforced Concrete	Reinforced Concrete
Diameter, feet	2 Feet	2 Feet
Elevation Crest	5,703.41 Feet	5,703.41 Feet
Capacity, cfs	80 cfs	80 cfs
Auxiliary Spillway		
Type	Reinforced Concrete	Reinforced Concrete
Crest Elevation	5,711.41 Feet	5,711.41 Feet
Capacity, cfs	1,000 cfs	1,000 cfs
Width, feet	15 Feet	15 Feet
Top of Dam Elevation	5,719.91 Feet	5,719.91 Feet
Datum	NAVD 88	NAVD 88

Source: Dam Assessment Report North Fork Ogden River Watershed Utaba Retarding Dam, Genterra Consultants, 2020.

Table 6-6: (PR&G Table 1) Estimated Installation Cost for Preferred Alternative, Utaba Dam Rehabilitation, Utah 2025$

Installation Cost Items	Estimated Costs		
	PL 83-566 Funds	Other Funds	Total
Structural Rehabilitation Alternative	$4,303,300	$1,900,700	$6,204,000
Total Project	**$4,303,300**	**$1,900,700**	**$6,204,000**

Table 6-7: (PR&G Table 2) Estimated Cost Distribution for Preferred Alternative
Utaba Dam Rehabilitation, Utah 2025$

Works of Improvement installation Costs	PL-566 Construction	PL-566 Engineering	PL-566 Project Admin.	Total PL-566	Other - Construction	Other – Real Property Rights	Other - Permits& Admin..	Total Other	Total Installation
Structural Rehabilitation Alternative	$3,251,300	$1,001,000	$51,000	**$4,303,300**	$1,750,700	$100,000	$50,000	**$1,900,700**	**$6,204,000**

Price Base:2025

Includes $0 for relocation assistance advisory service

Construction costs include $60,540.00 of PL 83-566 funds and $32,550 of other funds for wetland protection and mitigation measures

Includes $100,000 of easement acquisition cost for mitigation

Amortized Costs: $249,100.00

Annual O&M: $8,559.00

Total Annual Costs: $257,659.00

Table 6-8: (PR&G Table 4) Estimated Average Annual Costs Preferred Alternatives Utaba Dam Rehabilitation, Utah 2025$

Evaluation Unit	Project Outlays		Total[1]
	Amortization of Installation Cost[2]	Operation and Maintenance	
Structural Rehabilitation Alternative	$249,100	$8,559	$257,659
Total Project	**$249,100**	**$8,559**	**$257,659**

[1] Price base: 2025, discount rate 3.00% with a 52 year amortization period (period of analysis)

Prepared June 2025.

[2] Costs for technical assistance to install measures in this evaluation unit are included.

Table 6-9: (PR&G Table 5a) Estimated Average Annual Flood Damage Reduction Benefits, Utaba Dam Rehabilitation, Utah 2025$

	Average Annual Damages without Project		Average Annual Damages with Project		Average Annual Benefits[1,3,4]	
Item	**Ag Related[2]**	**Non-Ag Related**	**Ag Related[2]**	**Non-Ag Related**	**Ag Related[2]**	**Non-Ag Related**
Floodwater Damage						
Structure, Contents and Vehicles	$1,003,809	$0	$171,960	$0	$831,849	$0
Roads/Crossings	$46,679	$0	$4,670	$0	$42,009	$0
Subtotal	**$1,050,487**	**$0**	**$176,630**	**$0**	**$873,858**	**$0**
Sediment/Erosion Damage						
Sediment	$19,500	$0	$0	$0	$19,500	$0
Subtotal	**$19,500**	**$0**	**$0**	**$0**	**$19,500**	**$0**
Grand Total	**$1,069,987**	**$0**	**$176,630**	**$0**	**$893,358**	**$0**

[1] Price base: 2025

[2] Agriculture-related damage includes damage to rural communities.

[3] Includes effects of land-treatment measures.

[4] Costs and benefits for on-farmland treatment have been netted out.

Table 6-10: (PR&G Table 6) Comparison of Benefits and Costs, Utaba Dam Rehabilitation, Utah, 2025$

Evaluation Unit	Average Annual Costs	Average Annual Benefits	Benefit Cost Ratio	Net Benefits[1]
Structural Rehabilitation Alternative	$257,659	$893,358	3.47	$635,699
Grand Total	**$257,659**	**$893,358**	**3.47**	**$635,699**

[1] Price base: 2025

7.0 Consultation, Coordination, and Public Participation

This chapter details other consultation and coordination between NRCS and other federal, state, and local Government Agencies, Native American Tribes, and the public during the preparation of this Supplemental Plan-EA. Compliance with NEPA is a federal responsibility that involves the participation of each of these entities in the planning process. NEPA requires full disclosure concerning major actions taken by federal agencies and accompanying alternatives, impacts, and the potential mitigation of impacts. The scoping process is detailed in chapter 1.

7.1 Consultation

7.1.1 Standard Consultation Requirements

Standard consultation requirements include Section 106 of the National Historic Preservation Act (NHPA), National Environmental Policy Act (NEPA), Section 7 of the Endangered Species Act (ESA), and Section 12 of PL 83-566. The USACE was consulted under Section 106 as a consulting party and designated the NRCS the lead for the 106 consultation in September 2024 and confirmed in January 2025.

7.1.2 NHPA Section 106 Consultation

In compliance with Section 106 of the NHPA, the Utah SHPO was involved in consultation for the project (36 CFR 800.3). The NRCS initiated consultation in a letter dated August 14, 2024. Per NRCS and Utah SHPO protocols, no response was warranted. NRCS followed consultation protocols described in Section V.c.1 of the Prototype Programmatic Agreement between the NRCS and Utah SHPO where "NRCS may provide its proposed APE, identification of historic properties and/or scope of identification efforts, and assessment of effects in a single transmittal." The NRCS continued consultation with the Utah SHPO to define the APE (36 CFR 800.3 and 36 CFR 800.16(d)), make determinations of site eligibility (36 CFR 800.4), and to determine effects of the undertaking (36 CFR 800.5) (no adverse effect). Consultation letters requesting SHPO concurrence on the APE, site eligibility, and undertaking effects, were sent on October 2, 2024. SHPO provided concurrence with these items on October 11, 2024.

In accordance with the NHPA of 1966, and E.O. 13175, tribal consultation was conducted to maintain the NRCS's government-to-government relationship. To help fulfill the U.S. government's responsibilities toward Tribes when considering undertakings that may affect Tribal rights, resources, and assets, the NRCS contacted the local Tribes about the project and informed them of their role as consulting parties under the NHPA.

Tribes who hold ancestral land, traditional use, and/or traditional cultural property claims in and near the project area were identified using the NPS Native American Graves Protection and Repatriation Act (NAGPRA) Native American Consultation Database (NACD), a database through which any federally recognized Tribe could identify those counties in Utah where they had consultation interests. The U.S. Department of Housing and Urban Development's Tribal Directory Assessment Tool (TDAT), the BIA website, and the Utah Division of Indian Affairs (UDIA) website were used as supplemental sources to identify Tribes with consultation interests. The assembled list of Tribes identified from the NACD, TDAT, BIA website, and UDIA website are listed below.

Per 36 CFR 800.3, the NRCS initiated consultation with the following tribes in letters dated July 30, 2024. Tribes were asked for information regarding known historic properties or places of traditional religious and cultural importance near the Project area. Tribes were also asked about any additional Tribes that should be contacted.

- Northwest Band of the Shoshone Nation, Utah
- Ute Indian Tribe of the Uintah and Ouray Reservation, Utah
- Skull Valley Band of Goshute Indians, Utah
- Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
- Confederated Tribes of the Goshute Reservation, Utah
- Shoshone-Bannock Tribes of the Fort Hall Reservation, Idaho

No responses were received. Continuing consultation under 36 CFR 800.3-800.5, the NRCS consulted with the assembled list of tribes on the project APE, cultural resources site eligibility, and determination of effects (no adverse effect) in letters dated October 2, 2024. No responses were received. A summary of the communication dates and responses from the Tribes during the Section 106 consultation process is provided in the tribal consultation table, located in Appendix A. The follow-up email dates and responses are summarized below:

- Follow-Up Email Date #1: January 6, 2025
    - No Responses Received
- Follow-Up Phone Calls Date #2: January 10, 2025
    - Ute Indian Tribe of the Uintah & Ouray Reservation confirmed no concerns/interest
    - No Other Responses Received
- Consultation with the Tribes will continue during the Plan-EA review period and the results will be documented in the Final Plan-EA.

Consultation also occurred with Camp UTABA as they were identified as a consulting party under Section 106 of the NHPA (36 CFR 800.2). Consultation occurred in the form of a letter dated October 2, 2024, and Microsoft Teams meeting with the NRCS cultural resources specialist on January 8, 2025. During the meeting Camp UTABA concurred with sit eligibility and the finding of No Adverse Effect. Consultation documentation may be found in Appendix A.

Furthermore, Section 106 consultation also occurred with the USACE. This consultation occurred because of the likely need for a CWA Section 404 permit during design/permitting. The NRCS consulted with the USACE in emails during January 2025 (see Appendix A).

7.1.3 NEPA Consultation

7.1.3.1 Tribal Scoping for NEPA

Consultation was initiated during the NEPA scoping process when the NRCS reached out to the assembled list of Tribes, providing them with the opportunity to share their comments, ideas and concerns regarding the proposed project. The Tribal Consultation table in Appendix A provides the contacts and addresses of those who were sent scoping notices. Letters dated July 30, 2024, were mailed to the Tribes listed in Section 7.1.2 for the public scoping meeting held virtually with an option for in-person attendance on August 15, 2024:

7.1.4 Biological Consultation

7.1.4.1 Section 12 of Public Law (PL) 83-566

Consultation with the USFWS specifically pursuant to Section 12 of PL 83-566 was initiated on July 24, 2024. No adverse effects and no mitigation were identified. Correspondence can be found in Appendix A.

7.1.4.2 Section 7 of the Endangered Species Act (ESA)

During the planning phase of this project, a geotechnical investigation was performed to gather data on existing conditions and to assist in the proper formulation of potential alternatives. Prior to this work taking place, informal consultation with the USFWS regarding potential impacts of the geotechnical work on ESA species was conducted. This included preparation of an "Elementary" Biological Assessment (BA) for the geotechnical field work, which is included in Appendix E.

Following the geotechnical field work, surveys were performed as needed for the potentially present ESA species. Discussions were held in November and December of 2024 with USFWS to identify which parts of the study area should be surveyed and considered suitable habitat based on the findings of the 2024 field surveys conducted by Cirrus Ecological Solutions. Suitable habitat and survey areas were identified for the Western Yellow-billed Cuckoo and the Ute Ladies'-Tresses. Following the presence/absence surveys in 2025, a second Biological Assessment (BA) was prepared, this time for the full Proposed Action. The BA received concurrence from USFWS on February 18, 2026. A copy of the BA and USFWS concurrence is included in Appendix E.

7.2 Coordination

7.2.1 NEPA Agency Coordination

Various federal and state agencies received a scoping notice included in an email invite to a Microsoft Teams virtual meeting for agencies held on August 14, 2024.The meeting was attended by representatives from the Environmental Protection Agency (EPA) and the U.S. Fish and Wildlife Service (USFWS).

Letters were sent on August 7, 2024, to interested agencies and key stakeholders as listed in Table 7-1 to invite their participation as a cooperating agency. The Utah State Historic Preservation Office (SHPO) was consulted on aspects of the project pertaining to historic and/or cultural resources (i.e., determination of effects, mitigation, concurrence, etc.).

Table 7-1: Cooperating Agencies

Agency	Accepted / Declined
Environmental Protection Agency (EPA)	Accepted
U.S Bureau of Reclamation (USBR)	No Response Received
U.S. Fish and Wildlife Service (USFWS)	No Response Received
Bureau of Land Management (BLM)	No Response Received
U.S. Forest Service (USFS)	No Response Received
U.S. Army Corps of Engineers (USACE)	Declined
Utah State Agencies via the RDCC	No Responses Received

Agency	Accepted / Declined
Utah State Historic Preservation Office (SHPO)	Declined
Tribes (identified in Section 7.1.2.2 above)	No Responses Received

7.3 Public Involvement

The Scoping Report prepared for the project (Appendix A) presents the scoping efforts and comments received during the 30-day comment period (August 1, 2024, to September 1, 2024). A scoping notice announcing the public scoping meeting and period was placed in *The Standard Examiner*, a newspaper of general circulation in the project area, virtually on Weber County's Facebook page, the NRCS project webpage, and the project webpage of Franson Civil Engineers, the contracted engineering firm for the project. A public scoping notice was mailed to local residents, shareholders, and representatives from the Tribes identified in section 7.1.3.1. The public meeting was held in person with an option for virtual attendance on August 15, 2024. The comments and responses are included in Appendix A.

7.4 Plan Development and Review

This Plan-EA was developed in close coordination with multiple agencies and the public underwent the following informal and formal reviews, detailed below:

- Public and Agency Scoping (Plan-EA): August 2024
- State-Level Preliminary Review: August 2025
- National Level Technical Review (NWMC): September 2025
- Programmatic Review (NHQ): March 2026
- Public and Agency Review: April 2026

7.5 Distribution List

A notice of availability for the Draft Plan-EA was distributed to the following government agencies/staff and organizations.

7.5.1 Federal Agencies

- Environmental Protection Agency (EPA)
- U.S. Fish and Wildlife Service (USFWS)
- U.S. Bureau of Reclamation (USBR)
- U.S. Forest Services (USFS)
- Bureau of Land Management (BLM)
- U.S. Army Corps of Engineers (USACE)

7.5.2 Tribes

- Northwest Band of the Shoshone Nation, Utah
- Shoshone-Bannock Tribes of the Fort Hall Reservation, Idaho
- Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
- Ute Indian Tribe of the Uintah and Ouray Reservation, Utah
- Skull Valley Band of Goshute Indians, Utah
- Confederated Tribes of the Goshute Reservation, Utah

7.5.3 State Entities

- Utah State Historic Preservation Office (SHPO)
- Utah Department of Water Rights – Dam Safety Division (UDWRi)
- Utah Department of Water Resources (UDWR)
- Utah Department of Environmental Quality (UDEQ)
- Utah Department of Natural Resources (UDNR)
- Utah Division of Wildlife Resources (UDWLR)
- Utah Department of Transportation (UDOT)
- Weber State University (WSU)
- Office of Governor Spencer Cox
- Office of Lieutenant Governor Deidre Henderson
- State Representatives and Senators
    - Office of U.S. Senator Mike Lee
    - Office of U.S. Senator John Curtis
    - Office of U.S. Representative Blake Moore

7.5.4 Local Government

- Weber County
- Weber School District (WSD)
- Weber Basin Water Conservancy District (WBWCD)
- Huntsville City
- Town of Liberty
- Town of Eden
- Ogden City

7.5.5 Businesses and Organizations

- Durfee Creek Homeowners Association (HOA)
- Liberty Pipeline Company (LPC)
- Cole Canyon Water Company (CCWC)

7.5.6 Private Parties

Private parties include property owners and residents within the study area. The names and addresses of private parties who received notices of the Plan-EA are not listed in this chapter for privacy reasons.

8.0 References

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9.0 List of Preparers

This Plan-EA was reviewed by NRCS-Utah resource specialists and the NRCS's National Water Management Center (NWMC) in Little Rock, Arkansas.

Table 9-1: Plan-EA Preparers

Name	Title (Years of Experience)	Discipline Covered in the Planning Process	Education	Other
Employer: Natural Resources Conservation Service – Utah State Office (NRCS-Utah)				
Anders Fillerup	Assistant State Conservationist	PL 83-566 Planning		P.E.
Anthony Beals	Resource Conservationist	PL 83-566 Planning		--
Derek Hamilton	Water Resources Coordinator (25+ yrs)	NEPA Planning	B.S. Geography	--
		PR&G Planning	M.S. Environmental Science	
		ESA Section 7		
Tara Hoffmann	Water and Cultural Resources Specialist (20+ yrs)	Cultural and Historic Resources	B.S. Natural Resources	SOI Qualified
		NHPA Section 106 Consultation	M.A. Anthropology	
Nicole Steiff	Project Engineer (10+ yrs)	Engineering	B.S. – Civil Engineering	P.E.
		Hydrology and Hydraulics (H&H)		
Jonathan Bingham	Project Geologist	Geology and Soils		P.E.
Joshua Breggar	Project Geologist (3+ Years)	Geology and Soils	B.S. Geology M.S. Geology	
Anna Vargo	Seismologist	Geology and Soils		

Name	Title (Years of Experience)	Discipline Covered in the Planning Process	Education	Other
Employer: Franson Civil Engineers (FCE)				
Chad Brown	Project Manager (19+ yrs)	Engineering	B.S. – Civil and Environmental Engineering	P.E.: UT,ID,WY
		Economics	M.S. – Civil and Environmental Engineering	
		Sponsor Coord.		
Lance Houser	Senior Technical Manager (32+ yrs)	Hydrology and Hydraulics (H&H)	B.S. – Agricultural and Irrigation Engineering	P.E.: UT and ID
			M.S. – Civil and Environmental Engineering	
Landon Richins	Environmental Specialist (2+ yrs.)	Primary Author	B.S. – Environmental Science and Management	NWMC Contractor Training (2024)
		NEPA Planning	M.S. – Natural Resources	
		PR&G Planning		
Kyler Olsen	Staff Engineer (3+ yrs)	Engineering	B.S. – Civil Engineering	P.E.: UT
		Economics		
Martilyn Nielsen	Engineer I (4+ yrs)	Water Rights	B.S. – Civil Engineering	
		Hydrology and Hydraulics (H&H)		

Name	Title (Years of Experience)	Discipline Covered in the Planning Process	Education	Other
Employer: Other				
Jon Baxter	Archaeologist – Bighorn Archaeological Consultants.	Cultural Resource Inventory		SOI Qualified
Scott Evans	President – Cirrus Ecological Solutions	ESA Section 7 Field Work		
Adam Clifford	Wildlife Biologist – Cirrus Ecological Solutions	Western Yellow-billed Cuckoo Surveyor		
John Stewart	Botanist – Cirrus Ecological Solutions	Ute Ladies'-Tresses Surveyor		
Hal Gordon	Economist (34+ yrs)	Economics/PR&G	B.S. Range Science M.S. Ag. Economics	

10.0 Appendices

Appendix A. Comments and Responses

Appendix B. Project Map

Appendix C. Support Maps

Appendix D. Investigation and Analysis Report

Appendix E. Other Supporting Information