Final Watershed Plan and Environmental Assessment for the North Ogden Watershed

Fourmile Creek Subwatershed
Weber County, Utah

Sponsoring Local Organizations:
North Ogden City
Weber-Box Elder Conservation District

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

July 2024

Title and Document Status: Final Watershed Plan and Environmental Assessment (Plan-EA) for the North Ogden Watershed

State/County: Utah; Weber County

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

Cooperating Agencies: Not applicable

Sponsoring Local Organization (SLO): Weber-Box Elder Conservation District (WBECD) and North Ogden City

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

Abstract: This document was developed to assess the impacts of the North Ogden Project (Proposed Project). The purpose of the Proposed Project is to help North Ogden City more effectively manage agricultural and floodwater as well as provide additional recreational resources. Total project installation cost would be $115,224,408. The estimated amount to be paid by the USDA-NRCS Public Law 83-566 is approximately $11,972,423. The co-sponsors and other funding sources would pay approximately $3,251,985. This Plan-EA was developed pursuant to the requirements of the National Environmental Policy Act (NEPA) and is intended to be considered for authorization of Public Law 83-566 funding.

Comments and Inquiries: Submit comments and inquiries to: Derek Moss, J-U-B ENGINEERS, Inc.,466 N 900 W, Kaysville, Utah 84037; 801-547-0393, dmoss@jub.com.

Further information on this project may also be obtained by contacting Norm Evenstad, ASTC-Water Resources, Natural Resources Conservation Service, 125 South State Street, Room 4420, Salt Lake City, UT 84113, norm.evenstad@ut.usda.gov.

Non-Discrimination Statement: In accordance with federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on of race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived 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 compliant 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 complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at How to File a Program Discrimination Complaint (https://www.usda.gov/oascr/how-to-file-a-program-discrimination-complaint) or 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: (1) mail: U.S. Department of Agriculture Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, S.W, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

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

NORTH OGDEN WATERSHED, UTAH
WATERSHED WORK PLAN AGREEMENT

between

Weber-Box Elder Conservation District
(Referred to herein as Sponsor)

and the

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

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

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

Whereas, there has been developed through the cooperative efforts of the Sponsor and the NRCS a Watershed Work Plan and Environmental Assessment for works of improvement for the North Ogden Watershed, Utah, hereinafter referred to as the Watershed Project or Plan, which Plan is annexed to and made part of this agreement;

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

1. **Term.** The term of this agreement is for the installation period (2 years) and evaluated life of the project (100 years) and does not commit the NRCS to assistance of any kind beyond the end of the evaluated life (102 years).
2. **Costs.** The costs shown in this plan are preliminary estimates. Final costs to be borne by the parties hereto will be the actual costs incurred in the installation of works of improvement.
3. **Real Property.** The Sponsor will acquire such real property as will be needed in connection with the works of improvement. The amounts and percentages of the real property acquisition costs to be borne by the Sponsor and the NRCS are as shown in the cost-share table in section 5 hereof.

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

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

5. **Cost-Share for Watershed Project Plans.** Table 1 shows the cost-share percentages and amounts for the Watershed Project Plan implementation.

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

7. **Floodplain Management.** Before construction of any project for flood prevention, the Sponsor agrees to participate in and comply with applicable Federal floodplain management and flood insurance programs. The sponsor is required to have development controls in place below low and significant hazard dams prior to NRCS or the sponsor entering into a construction contract.

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

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

Table 1. Cost-share Table for Watershed Operation Projects

Works of Improvement	NRCS		Sponsors		Total
Cost-Sharable Items [1/]	**Percent**	**Cost**	**Percent**	**Cost**	**Cost**
Flood Prevention - Storage Reservoir, Pump Station, and Floodwater Pipelines (Flood Prevention)	100	$2,598,488	0	$0	$2,598,488
Agricultural Water Management - Storage Reservoir, Pump Station, and Irrigation Pipelines (Agricultural Water Management)	75	$5,872,055	25	$1,957,352	$7,829,407
Recreation - Trail, Pavilion, Restrooms, Open Space, Playground Equipment, Courts, and Parking Lot (Public Recreation)	50	$1,252,633	50	$1,252,633	$2,505,267
Relocation [2/]	0	$0	0	$0	$0
Subtotal: Cost-Sharable Costs		$9,723,177		$3,209,985	$12,933,162
Non-Cost-Sharable Items	**Percent**	**Cost**	**Percent**	**Cost**	**Cost**
NRCS Technical Assistance/Engineering	100	$1,799,397	0	$0	$1,799,397
Project Administration	97	$449,849	3	$12,000	$461,849
Water, Mineral and Other Resource Rights	0	$0	0	$0	$0
Permits	0	$0	100	$30,000	$30,000
Real Property Rights	0	$0	0	$0	$0
Relocation, Beyond Required Decent, Safe, Sanitary	0	$0	0	$0	$0
Non-Project Costs	0	$0	0	$0	$0
Subtotal: Non-Cost-Sharable Costs		$2,249,246		$42,000	$2,341,246
Total		**$11,972,423**		**$3,251,985**	**$15,224,408**

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.

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

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

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

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

14. **Operation and Maintenance (O&M).** The Sponsor will be responsible for the operation, maintenance, and any needed replacement of the works of improvement by performing the work or arranging for such work, in accordance with an O&M Agreement. An O&M agreement will be entered into before Federal funds are obligated and will continue for the project life 100 years. Although the sponsor's responsibility to the Federal Government for O&M ends when the O&M agreement expires upon completion of the evaluated life of measures covered by the agreement, the Sponsor 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 Sponsor must prepare an Emergency Action Plan (EAP) for each dam or similar structure where failure may cause loss of life or as required by state and local regulations. The EAP must meet the minimum content specified in NRCS Title 180, National Operation and Maintenance Manual (NOMM), Part 500, Subpart F, Section 500.52, and meet applicable State agency dam safety requirements. The NRCS will determine that an EAP is prepared prior to the execution of fund obligating documents for construction of the structure. EAPs must be reviewed and updated by the Sponsor annually.

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

    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: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

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

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

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

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

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

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

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

18. Certification:

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

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

(2) Establishing an ongoing drug-free awareness program to inform employees about:

(a) The danger of drug abuse in the workplace;

(b) The grantee's policy of maintaining a drug-free workplace;

(c) Any available drug counseling, rehabilitation, and employee assistance programs; and

(d) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.

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

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

(a) Abide by the terms of the statement; and

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

B. The Sponsor signatory to this agreement agrees as follows:

(4) To comply with all the requirements of section 114 of the Clean Air Act as amended (42 U.S.C. Section 7414) and section 308 of the Federal Water Pollution Control Act (33 U.S.C. Section 1318), respectively, relating to inspection, monitoring, entry, reports, and information, as well as other requirements specified in section 114 and section 308 of the Air Act and the Water Act, issued there under before the signing of this agreement by the NRCS.

(5) That no portion of the work required by this agreement will be performed in facilities listed on the EPA List of Violating Facilities on the date when this agreement was signed by the NRCS unless and until the EPA eliminates the name of such facility or facilities from such listing.

(6) 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.

(7) 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:

(8) The term “Air Act” means the Clean Air Act, as amended (42 U.S.C. Section 7401 et seq.).

(9) The term “Water Act” means Federal Water Pollution Control Act, as amended (33 U.S.C. Section 1251 et seq.).

(10) 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).

(11) 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).

(12) 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.

22. 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.

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

24. Signatures

Sponsors: North Ogden City

Signature: S. Neal Berube (Feb 14, 2024 16:01 PST)

Name: S. Neal Berube

Title: Mayor

Date: 02/13/2024

Address: 505 E. 2600 North, North Ogden Utah 84414

The signing of this plan was authorized by a resolution of the governing body of North Ogden City
Adopted at a meeting held on 02/13/2024
Address 505 E. 2600 North North Ogden
Secretary [or other Title]: Rian Santoro
Rian Santoro (Feb 15, 2024 08:18 MST)
Date: 02/13/2024

Sponsors: Weber-Box Elder Conservation District

Signature: David S. Humphreys

Name: DAVID S. HUMPHREYS

Title: President

Date: 20 Feb 2024

Address: 2828 N. 975 E North Ogden, UT 84414

The signing of this plan was authorized by a resolution of the governing body of the Weber-Box Elder Conservation District
Adopted at a meeting held on 02/13/2024
Address 471 W 2nd street Ogden UT 84404
Secretary [or other Title]: ~~Jeff Hall~~
Date: 2-20-24

USDA United States Department of Agriculture
Natural Resources Conservation Service

Approved By: EMILY FIFE Digitally signed by EMILY FIFE Date: 2024.04.05 13:58:35 -06'00'

EMILY FIFE

Title: NRCS State Conservationist

Date:

Table of Contents

List of Tables

List of Figures

Appendices

Summary

Office of Management and Budget Fact Sheet

S.1 Title of Proposed Action

Final Watershed Plan and Environmental Assessment (Plan-EA) for the North Ogden Watershed.

S.2 Watershed

Weber Creek – Frontal Salt Lake (Hydrologic Unit Code [HUC] 1602010206); Fourmile Creek Subwatershed (HUC 160201020602)

S.3 County, State

Weber County, Utah

S.4 Congressional District

Utah Congressional District 1

S.5 Sponsoring Local Organizations

Weber-Box Elder Conservation District (WBECD) and North Ogden City

S.6 Authority

Natural Resources Conservation Service (USDA-NRCS) – Lead Federal Agency under Public Law (PL) 83-566 Stat. 666 as amended (16 U.S.C. Section 1001 et. Seq.) 1954.

S.7 Cooperating Agency

None

S.8 Purpose and Need for Action

The purpose of the proposed North Ogden Project (Proposed Project) is to improve management of irrigation water allocated by the WBECD, provide flood damage risk reduction for people and structures in North Ogden City, and provide recreational opportunities for residents of North Ogden City and Weber County. As residential and commercial development expands in Weber County, North Ogden City has experienced an increase in flood-related damages because of a diminished capacity to contain and detain floodwater. There is a need to detain peak runoff in the Project Area to protect land and community infrastructure from flood related damages. Modeling of the Project Area shows that during a 50-year storm event, 45 residential structures and 3 acres of agricultural land would experience flooding. During a 100-year storm event, 58 residential structures, eight commercial structures, and approximately 24 acres of agricultural land would be flooded. 283 residential structures, 12 commercial buildings, and approximately 210 acres of agricultural land would experience flooding during a 500-year event.

Additionally, areas with increased development and areas experiencing drought have an increased need for greater efficiency in irrigation-water delivery systems. North Ogden City also lacks sufficient recreation opportunities to match the recent residential and commercial development. The Proposed Project would provide flood prevention during high runoff events and would create an efficient irrigation-water delivery system. The proposed facilities will help mitigate flooding risks in areas in the vicinity of the North Ogden Canal. The North Ogden Canal receives water from Slide Canyon, Mountain Water Channel, Willow Springs, Barrett Canyon and Pine Canyon. The Proposed Project would also provide additional recreational elements in North Ogden City.

S.9 Description of the Preferred Alternative

The North Ogden Project is a water efficiency and flood control project focused on the Fourmile Creek subwatershed within Weber County, Utah. The Proposed Project addresses irrigation-water delivery and floodwater concerns by creating a storage reservoir and improvements to floodwater conveyance system to regulate floodwater and to improve irrigation delivery efficiency. The Proposed Project would create a 42.5-acre-foot (ac-ft) reservoir that would be used for irrigation water management and floodwater detention. The irrigation water regulated through the basin and pump system would serve portions of North Ogden City, Pleasant View City, and Harrisville City, covering approximately 2,753 acres. Recreational components of the Proposed Project would include open space, a walking trail, pavilion with restrooms, playground equipment, pickleball court, and a parking area (see Appendix C for conceptual design of recreational facilities). Construction is anticipated to occur over a two-year period commencing in the 2024, pending environmental approval. Construction of the reservoir and associated irrigation improvements would occur from October 15 to April 15, outside of the irrigation season. The funding schedule is anticipated to be 2024 for design and 2025/2026 for construction.

S.10 Resource Information

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

Table S-1. Existing Resource Information

Resource	Description
Latitude / Longitude	41.301296, -111.975703
Hydrologic Unit Number	160201020602 (Fourmile Creek)
Climate	July average 81.0 ^{o}F January average 28.0 ^{o}F
Topography	Mountainous foothills
Annual Precipitation / Snowfall	22.5 inches / 50.0 inches
Watershed Area	28,936 acres (Fourmile Creek subwatershed)
Reservoir Capacity	42.5 ac-ft
Land Uses	Residential, Agricultural
Land Ownership (Watershed)	Federal (38%), State-Local (13%), Private (48%)
Population (Weber County)*	255,284

Resource	Description
Demographics (Weber County)*	White: 76.0% Hispanic or Latino: 18.0% Asian: 1.0% Two or More Races: 3.0% Native Hawaiian and Other Pacific Islanders: 0.0% American Indian and Alaska Native: 0.0% African American: 1.0%
Farms Present (Weber County)**	1,121
Land in Farms (Weber County)**	117,415 acres
Average Farm Size (Weber County)**	105 acres

** Based on 2020 EPA EJScreen ACS Summary Report 2016-2020 (EPA 2020a).*
***Based on 2012 USDA-NRCS Census of Agriculture (USDA 2014)*

S.11 Alternative Plans Considered

Alternatives that were analyzed in detail in this Final Plan-EA include the No Action Alternative and the Action Alternative.

- Other alternatives were considered during the planning phase, but they were eliminated from further study due to environmental impacts, feasibility, cost constraints, and inability to meet the purpose and need of the project.
- The No Action Alternative assumes that with no future federal investment, implementation of the North Ogden Project would likely not occur. Specifically, without federal investment, the North Ogden Irrigation Company would not replace its older pump house and pipeline, and the new storage reservoir would not be constructed. The recreational amenities associated with the proposed reservoir also would not be implemented or available to the community.
- The Action Alternative proposes expansion of the existing irrigation infrastructure, construction of a new multi-purpose irrigation and floodwater reservoir, new pump station, and recreational facilities. The new reservoir would have sufficient capacity to simultaneously manage floodwater, increase capacity for agricultural water, and include additional recreational facilities. The existing detention basin would then be abandoned.

The National Economic Development (NED) Alternative and Preferred Alternative is the Action Alternative.

S.12 Project Costs by Purpose and Funding Source

Estimated installation costs are $3,251,985 from project applicant participation, and $11,972,423 from PL 83-566 federal funds. The breakdown of estimated project costs is summarized in **Table S-2**.

Table S-2. Estimated Installation Costs

Item	Cost Allocation				Cost Sharing							
	Project Total				PL 83-566				Other			
	Agricultural Water Management	Flood Prevention	Public Recreation	Total	Agricultural Water Management	Flood Prevention	Public Recreation	Total	Agricultural Water Management	Flood Prevention	Public Recreation	Total
Construction	$7,829,407	$2,598,488	$2,505,267	$12,933,162	$5,872,055	$2,598,488	$1,252,633	$9,723,177	$1,957,352	$0	$1,252,633	$3,209,985
Engineering	$1,089,309	$361,529	$348,559	$1,799,397	$1,089,309	$361,529	$348,559	$1,799,397	$0	$0	$0	$0
Permits	$15,000	$15,000	$0	$30,000	$0	$0	$0	$0	$15,000	$15,000	$0	$30,000
Administration	$276,327	$94,382	$91,140	$461,849	$272,327	$90,382	$87,140	$449,849	$4,000	$4,000	$4,000	$12,000
Total	**$9,210,043**	**$3,069,399**	**$2,944,966**	**$15,224,408**	**$7,233,691**	**$3,050,399**	**$1,688,332**	**$11,972,423**	**$1,976,352**	**$19,000**	**$1,256,633**	**$3,251,985**

S.13 Project Benefits

The Proposed Project would provide flood control during high runoff events and would create an efficient irrigation-water delivery system for the North Ogden area, Pleasant View, and Harrisville. The project benefits would cover an area of approximately 2,753 acres. The Proposed Project would also develop recreational facilities for the general public. Modeling of the Proposed Project shows that the Proposed Project improvements would reduce flooding of 45 residential structures and 3 acres of agricultural land during a 50-year storm event, reduce flooding of 2 residential structures, 1 commercial structures, and 18 acres of agricultural land during a 100-year storm event, and reduce flooding of 29 residential structures, 1 commercial structures, and 78 acres of agricultural land during a 500-year event.

Currently, the WBECD provides pressurized irrigation water services to approximately 70% of the residences in Unit 1 of its service area. This pressurized irrigation is used for farming of pasture grasses, small residential farms and residential landscaping. Once implemented, the Proposed Project would provide the opportunity for pressurized irrigation water to the additional 30% of water users in WBECD Unit 1 located in North Ogden City, Pleasant View City, and Harrisville City. The irrigation waters currently going to these users is not pressurized and therefore water users in this area have to flood irrigate or construct individual pumping stations to provide pressure irrigation to their properties. Once the Proposed Project is implemented, pressurized irrigation would be available to all users in WBECD Unit 1 service area. These irrigation waters would be used for multiple land uses including pasture grass farms, hobby farms, and residential landscaping. The Proposed Project would also provide flood damage reduction benefits in the area.

The economic analysis for the Proposed Project determined that the Action Alternative would result in $360,300 average annual agricultural water management benefits. The Action Alternative would also result in $136,600 average annual flood damage reduction benefits to residential property, commercial property, and crop and pasture. Residential property would receive the majority of damage reduction benefits, amounting to $128,000, while commercial property and crop and pasture would receive $7,900 and $100, respectively. Benefits from implementing the Proposed Project, and the benefit-cost ratio are described in **Table S-3** below.

S.14 Net Economic Benefits

The estimated annual project economic benefits for the Proposed Project are summarized in **Table S-3**. The Action Alternative (Preferred Alternative) is also the NED Alternative for the Proposed Project, per sections 505.2 and 505.35.B(1)(iv) of the National Watershed Program Manual (NWPM). The net annual economic benefit is $175,200 for the Preferred Alternative.

Table S-3. Estimated Annual Net Economic Benefits

Project Measure	Total Annual Benefit	Total Annual Cost	Benefit Cost Ratio	Net Annual Economic Benefit
Agricultural Water Management	$360,300	$328,200	1.10	$32,100
Flood Control	$136,00	$88,600	1.53	$47,400
Recreation	$252,800	$157,100	1.61	$95,700
Total	**$749,100**	**$573,900**	**1.31**	**$175,200**

S.15 Period of Analysis

The standard period of analysis for a project receiving PL 83-566 funding is 50 to 100 years. The North Ogden Project was analyzed for a period of 102 years, accounting for a 100-year project life and a 2-year installation period.

S.16 Project Life

The life of the North Ogden Project is 100 years.

S.17 Environmental Impacts

A summary of resource concerns and their relevancy to the Proposed Project is provided in **Table S-4.**

Table S-4. Summary of Resource Concerns and Impacts

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
Soils & Geology		
Soils / Prime & Unique Farmlands	Soil disturbance from the Proposed Project actions.	Soils would be both temporarily and permanently disturbed due to construction activities. Construction induced erosion would be mitigated through the use of Best Management Practices (BMPs).
Geology	Excavation activities from the Proposed Project actions.	No adverse effects on the geology in the area.
Soil erosion and sedimentation	Soil disturbance from the Proposed Project actions.	No adverse effects. Post-construction localized erosion and downstream sedimentation may be reduced due to the increased storage capacity and improved floodwater regulation.
Water Resources		
Surface Water & Water Quality	Construction activities are associated with diversion from the North Ogden Canal and construction of a new irrigation and floodwater management reservoir. The new reservoir would have sufficient capacity and the	Proposed floodwater infrastructure improvements would improve water quality with the installation of an oil-water separator and rotating screen.

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
	existing detention basin would be abandoned.	
Hydrology	The Proposed Project would alter flood control hydrology.	Beneficial impact due to the increased water storage capacity and minimization of flood events.
Water Rights	The Proposed Project would divert irrigation water from the North Ogden Canal at an existing diversion point into the lateral and then to the irrigation reservoir.	No effect. There would be no change in water rights as a result of the Proposed Project.
Groundwater & Water Quality	The Proposed Project may impact groundwater recharge.	No effect. There would be no anticipated change to groundwater or water quality from the Proposed Project.
Clean Water Act / Waters of the U.S. including Wetlands	The Proposed Project would include diversion from the North Ogden Canal, construction of a new irrigation and floodwater management reservoir.	There are no jurisdictional waterways, wetlands or other waters of the U.S. in the Project Area. Therefore, there would be no adverse effect.
Floodplain Management	The Proposed Project may impact the existing floodplain management in the Project Area.	The Proposed Project would minimize flood events and improve floodplain management. The proposed structure would provide flood prevention measures.
Climate Change	Greenhouse gas (GHG) emissions would be released during construction.	No long term impacts. Construction-related emissions of GHGs would be temporary and would not significantly contribute to GHG emissions on a local, regional, or global scale. Construction-related emissions are not anticipated to significantly contribute to climate change in the Project Area. Cumulative impacts are not anticipated.
Air Quality		
Clean Air Act / National Ambient Air Quality Standards	Emissions from construction activities.	Temporary construction related air emissions would occur.
Climate & Greenhouse Gases	Emissions from construction activities.	Temporary construction related air emissions would occur.
Plants		
Dominant Vegetation Communities	Temporary disturbance to dominant plant species within the Project Area.	Vegetation would be cleared, resulting in both temporary and permanent impacts. BMPs would be implemented during construction to reseed cleared areas and avoid impacts to vegetation wherever possible.
Special Status Plant Species	Temporary disturbance to plant species within the Project Area.	No effect.

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
Noxious Weeds & Invasive Plants	Construction activities could increase the potential for establishment of noxious weeds and invasive plants.	Construction activities could put the Project Area at a higher risk of invasive weeds. BMPs would be implemented to minimize the spread of invasive plants during construction.
Riparian Areas	Disturbance to existing constructed riparian area and pond.	The Proposed Project would have a negative impact on the existing human created riparian area located around the constructed pond. The Proposed Project is anticipated to have no impact on natural waterways or natural riparian areas in the subwatershed.

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
Animals		
Animals & Habitat	Proposed Project activities may impact fish, wildlife, and their habitat in the Project Area.	Wildlife would be temporarily disturbed during construction. Implementation of the Proposed Project would temporarily disturb open water habitat used by waterfowl. It is anticipated that the Proposed Project would not affect fish in the Project Area.
Special Status Animal Species	Proposed Project activities may impact special status animal species with the potential to occur in the Project Area.	No effect. The Project Area does not contain suitable habitat for special status species with the potential to occur in the Project Area.
Migratory Birds / Bald and Golden Eagles	Proposed Project activities may impact protected avian species with the potential to occur in the Project Area.	If feasible, construction would be timed to avoid the active breeding and nesting seasons for migratory birds. If scheduling is not feasible, active nest surveys would be performed before construction occurs.
Human		
Socioeconomics	Socioeconomic impacts to the population in the Project Area.	Net $175,200 average annual damage reduction benefits.
Environmental Justice & Civil Rights	Protected populations are present within the Project Area.	No impact. There are no anticipated negative impacts to the community or any protected populations from the Proposed Project.
Cultural & Historic Resources	Cultural and historic resources may be present in the area of potential effect (APE).	No impact. The Proposed Project would not adversely impact any cultural or historic resources in the Project Area. If construction activities uncover any materials of cultural or historical significance (i.e., bone fragments, pottery, stone tools, etc.), construction would halt and coordination with the USDA-NRCS Archaeologist would occur.
Hazardous Materials	Fuel and oil associated with construction equipment would be used on site.	No long-term effect. Temporary construction impacts would be mitigated through the use of an approved spill prevention control and countermeasure (SPCC) plan.
Public Health & Safety	Recurrent flooding and associated human and property damage.	Flooding risks and flood damages would be reduced by providing additional floodwater detention capacity. The reservoir would be designed to meet the requirements of the USDA-NRCS and Utah Division of Dam Safety. The structure has been classified by USDA-NRCS as a low hazard dam.
Recreation	Fourmile Creek subwatershed contains a variety of recreation activities.	The Proposed Project would have a net beneficial impact by increasing recreation opportunities in the Project Area. The

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
		Proposed Project would include park like facilities that would promote recreational use.
Land Use	A portion of the Proposed Project would occur on private property.	No property acquisition would be required for the Proposed Project. Under North Ogden City zoning requirements, the Proposed Project would be considered a permitted land use. Zoning may require development permits for any new structures within the breach inundation area. North Ogden City, per North Ogden City Code 10-4-7 Flood Hazard Reduction, would require that "new construction shall have the lowest floor (including basement), elevated to or above the base flood elevation" (North Ogden City 2005). This ensures that the hazard class does not increase during the evaluated project life per NWPM 504.1.C.
Visual Resources & Scenic Beauty	Construction disturbance and equipment in the Project Area.	Temporary impacts to visual quality during construction.
Transportation & Infrastructure	Temporary impacts to transportation during construction. Modification to the existing constructed pond and North Ogden Canal.	Net beneficial impact on infrastructure from the irrigation and floodwater infrastructure improvements. Temporary impacts to transportation facilities from increased construction traffic and partial lane closures, or reductions in travel lane widths.
Noise	Construction related noise increases.	Temporary increases in noise would be associated with construction activities. Noise levels would return to background sound levels post-construction.

S.18 Mitigation Measures

Soils: Erosion may occur on disturbed and cleared areas within the project boundary during precipitation events. Proper sediment and erosion control BMPs, such as straw wattles or silt fencing, would be installed to prevent and control soil erosion.

Water Quality: Project design elements, including BMPs, would be used and would be implemented to protect water quality. Construction BMPs would include, but are not limited to, the following:

- A Storm Water Pollution Prevention Plan (SWPPP) that contains erosion and sediment control and pollution prevention BMPs, such as, but not limited to, implementation of silt fences and fiber wattles.
- Any water bodies, if present and adjacent to construction and staging areas would be identified, and such measures as straw bales, silt fences, and other appropriate sediment control BMPs would be implemented to prevent the entry of sediment and any other contaminants into waters.

- To ensure that accidental spills do not enter waters, the storage of petroleum-based fuels and other hazardous materials and the refueling of construction machinery would not occur outside of approved, designated staging/batch plant areas. Furthermore, the Proposed Project would comply with state and federal water quality standards and toxic effluent standards to minimize any potential adverse impacts from discharges to waters of the U.S.
- No construction materials shall be stockpiled or deposited in or near any water bodies.

Air Quality: Fugitive dust, Mobile Source Air Toxics (MSATs), and GHG emissions increases associated with construction would be minimized by implementation of applicable BMPs. These include the following:

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

Plants: Vegetation would be removed in order to construct the storage reservoir. Vegetation removal would be limited to the smallest extent practical within this area. An herbaceous plant seed mixture, as approved by Utah Division of Wildlife Resources (UDWR) and USDA-NRCS, would be used in these areas cleared of trees and shrubs. All temporary disturbed areas would be revegetated with approved plants and seeds mixtures. There is no compensatory mitigation proposed for vegetation clearing associated with the Proposed Project.

During construction activities, area roads would be utilized by trucks and equipment to access the site; however, implementation of construction BMPs would minimize the potential for transport of noxious weeds into the area. During construction and until the restoration area is fully established, it would be maintained on a regular basis to prevent the establishment of noxious weeds and invasive plant species. Non-desirable plant species would be controlled by cleaning equipment prior to delivery to the project site, eradicating them before the start and during construction as identified, and routine monitoring after construction completion.

Animals: To minimize impacts to threatened, endangered, or state-listed species, construction would be timed to avoid breeding, nesting, and spawning for gray wolf (*Canis lupus)*, June sucker (*Chasimistes liorus*), and yellow-billed cuckoo (*Coccyzus americanus)*. Overall, no impacts to these species are anticipated.

Construction activities would be limited to the smallest extent practicable within the Project Area and would occur outside migratory bird breeding/nesting periods unless surveyed by a qualified biologist for active nests no more than 5 days prior to the commencement of work.

If active nests are found during surveys, spatial buffers would be established in coordination with U.S. Fish and Wildlife Service (USFWS) and USDA-NRCS. Construction activities within the buffer areas will be prohibited until a qualified biologist confirms that all nests are no longer active

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

Compensatory mitigation would not be required for the Preferred Alternative.

S.19 Major Conclusions

The Action Alternative would result in fewest environmental impacts and would also represent the greatest net economic benefits of the analyzed alternatives. The Action Alternative is both the Preferred Alternative and the NED Alternative.

S.20 Areas of Controversy and Issues to be Resolved

There are no anticipated areas of controversy for the North Ogden Project.

S.21 Evidence of Unusual Congressional or Local Interest

There is no evidence of unusual congressional or local interest associated with the North Ogden Project.

S.22 In Compliance

This report is in compliance with executive orders, public laws, and other statutes governing the formulation of water resource projects. _X__ YES _____ NO

1 Introduction

1.1 Introduction

The U.S. Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS), the Weber-Box Elder Conservation District (WBECD), and North Ogden City propose to use federal funds to construct piping to divert flood and irrigation water from the North Ogden Canal to a new multi-purpose storage reservoir, a pump station, and an outlet pipe to move water from the storage reservoir into the existing stormwater system through provisions of the Watershed and Flood Prevention Operations Program (WFPO). The activities proposed by the cooperating entities would address flood control, water conservation, and water delivery efficiency.

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

For the purpose of the North Ogden Watershed Plan and Environmental Assessment (Plan-EA; North Ogden Project; Proposed Project), the watershed limits evaluated in this Plan-EA has been defined as the Fourmile Creek Subwatershed (Hydrologic Unit Code [HUC] 160201020602). The USDA-NRCS is the lead federal agency for this Proposed Project. In carrying out this role, USDA-NRCS provides financial and technical assistance to cooperating entities to protect and restore watersheds up to 250,000 acres.

This Plan-EA has been prepared by the USDA-NRCS to assess the potential impacts of the North Ogden Project, which is intended to improve water use efficiency and conservation by improving pipeline infrastructure and creating a storage reservoir to regulate floodwater and irrigation water delivery within the Fourmile Creek Subwatershed. The USDA-NRCS is responsible for review and issuance of a decision in accordance with the National Environmental Policy Act (NEPA).

This Plan-EA has been prepared in accordance with applicable Council on Environmental Quality (CEQ) regulations implementing NEPA at 40 Code of Federal Regulations (CFR) 1500-1508, USDA's NEPA regulations (7 CFR Part 650), USDA-NRCS Title 190 General Manual Part 410, and the USDA-NRCS National Environmental Compliance Handbook Title 190 Part 610 (May 2016). This Plan-EA also meets the guidelines of the USDA-NRCS National Watershed Program Manual (NWPM; NRCS 2014c) and the USDA-NRCS National Watershed Program Handbook (NWPH; NRCS 2014b).

1.1.1 Conditions Requiring the Preparation of a Watershed Plan

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

1.1.2 Decision Matrix

The USDA-NRCS, in coordination with the Sponsoring Local Organizations, must settle on a preferred federally assisted alternative that contains the greatest net benefits. This alternative is referred to as a National Economic Development (NED) plan. As the responsible official, the USDA-NRCS State Conservationist must determine whether or not the preferred alternative constitutes a major federal action that significantly affects the quality of the human environment. If the responsible official determines that the preferred alternative would not significantly affect the quality of the human environment, then the USDA-NRCS State Conservationist would prepare and sign a Finding of No Significant Impact (FONSI). If the responsible official determines that the preferred alternative would have a significant effect on the quality of the human environment, then an Environmental Impact Statement (EIS) and Record of Decision (ROD) must be completed before the project can progress.

1.2 Purpose & Need Statement

The purpose of the proposed North Ogden Project is to improve management of irrigation water, provide flood damage risk reduction for people and structures in North Ogden City, and provide recreational opportunities for residents of North Ogden City and Weber County.

Agricultural Water Management

A purpose of the proposed North Ogden Project is to improve efficiency of the agricultural water management system managed by the WBECD. As residential and commercial development expands in Weber County, North Ogden City has experienced an increase in flood-related damages to residential properties, agricultural land, and infrastructure because of a diminished capacity to contain and detain floodwater. Additionally, areas with increased development and areas experiencing drought have an increased need for greater efficiency in irrigation-water delivery systems. The frequency and severity of droughts in Utah has steadily increased over the years. According to the National Oceanic and Atmospheric Administration (NOAA), in 2018, Utah experienced its driest year on record since 1895, sixteen of Utah's major reservoirs were below 20% capacity, and half of those were below 5 percent capacity (NOAA 2020).

Currently the WBECD provides pressurized irrigation water services to approximately 70% of the users in Unit 1 of its service area. There is a need for an efficient agricultural water management/irrigation water delivery system and pressurized irrigation for the additional 30% of water users served by the North Ogden Canal. Currently the irrigation water provided to 30% of the water users is not pressurized requiring the use of either flood irrigation practices or individual pressurizing systems on private property.

Flood Prevention (Flood Damage Reduction)

A second purpose of the North Ogden Project is to address floodwater runoff in the Project Area, including the North Ogden Canal, to protect land and community infrastructure from flood related damages.

Modeling of the Project Area indicates that during a 50-year storm event, 45 residential structures and 3 acres of agricultural land would experience flooding. During a 100-year storm event, 58 residential structures, 8 commercial structures, and approximately 24 acres of agricultural land would be flooded. 283 residential structures, 12 commercial buildings, and approximately 210 acres of agricultural land would experience flooding during a 500-year event.

Public Recreation

A final purpose of the North Ogden Project is to address a lack of public recreation opportunities in the North Ogden community.

1.3 Scope of the Plan-EA

The North Ogden Project is intended to improve irrigation water management and delivery, improve floodwater management, and reduce flood risk from storm event runoff. Without the proposed reservoir, the North Ogden area would continue to experience higher flood risks and greater inefficiency in irrigation water delivery and management. USDA-NRCS determined that the proposed reservoir and floodwater infrastructure improvements are eligible for support under the WFPO Program, and that NEPA analysis would be required. The planning of the Proposed Project started in May 2018 with the kick-off of the NEPA Plan-EA preparation process.

Agency and stakeholder participation, along with public involvement, are key components that lead the NEPA process. Project information was made available to the public during the scoping period from June 13, 2018 to July 13, 2018. A public scoping meeting was held on June 26, 2018, at the North Ogden City Office Building in North Ogden, Utah. Additional meetings with agency officials and stakeholders occurred during that time period. Details related to the scoping process, meeting records and public involvement may be found in the Scoping Report located in Appendix A. Information from the scoping efforts has been incorporated into the EA.

Table 1-1 summarizes the results of the scoping meetings and agency coordination and identifies resource concerns relevant to the Proposed Project.

Table 1-1. Resource Concerns Summary

Resource of Concern	Relevant to the Proposed Project		Rationale
	Yes	No	
Soils & Geology			
Soils / Prime and Unique Farmlands	X		Soil classified as protected farmland are located in and adjacent the Project Area.
Geology	X		Construction activities may impact soils.
Water Resources			
Surface Water and Water Quality	X		Construction activities may impact surface water quality. The Proposed Project also includes improvements and recreational opportunities that may impact water quality.
Hydrology	X		The Proposed Project would provide a floodwater management system.
Water Rights	X		The Proposed Project would require an irrigation water diversion.
Groundwater & Water Quality	X		The Proposed Project improvements may impact groundwater recharge.
Clean Water Act / Waters of the U.S. including Wetlands	X		An open water feature and associated vegetation exists in the Project Area.

Resource of Concern	Relevant to the Proposed Project		Rationale
	Yes	No	
Floodplain Management	X		The Proposed Project would create additional floodwater storage.
Climate Change	X		Construction activities may impact climate change.
Coastal Zone Management		X	There are no coastal resources in the State of Utah.
Coral Reefs		X	There are no coral reefs in the State of Utah.
Regional Water Resources Plan		X	The Proposed Project would have no impact on regional water resource plans.
Sole Source Aquifer		X	There are no sole source aquifers in or directly adjacent to the Project Area.
Wild and Scenic Rivers		X	There are no Wild and Scenic Rivers, Study Rivers or designated river segments in or adjacent to the Project Area.
Air Quality			
Air Quality	X		Construction activities have potential to increase air pollutants.
Plants			
Dominant Vegetation Communities	X		The Proposed Project includes temporary and permanent impacts to vegetation.
Special Status Plant Species	X		Special status plant species may exist in the subwatershed.
Noxious Weeds & Plant Species	X		Noxious plant species were observed in the Project Area.
Riparian Areas	X		Riparian vegetation associated with the existing constructed pond is found in the Project Area.
Animals			
Essential Fish Habitat		X	There is no designated Essential Fish Habitat in or adjacent to the Project Area.
Fish		X	The Proposed Project would have no impact on fish.
Wildlife	X		Wildlife may exist in the Project Area.
Special Status Species	X		Special status animal species may exist in the subwatershed.
Invasive Fish & Wildlife Species	X		Invasive fish and wildlife species may exist in the subwatershed.
Migratory Birds/Bald and Golden Eagles	X		The Proposed Project would include vegetative clearing that may impact migratory birds.
Human Environment			
Socioeconomics	X		The Proposed Project is located in a populated area.
Environmental Justice & Civil Rights	X		Protected populations exist within a 1-mile radius of the Project Area.
Cultural & Historic Resources	X		Construction activities have potential to impact cultural resources, if any exist in or adjacent to the Project Area.

Resource of Concern	Relevant to the Proposed Project		Rationale
	Yes	No	
Hazardous Materials	X		Construction activities have the potential to increase or impact solid and hazardous waste.
Public Health & Safety	X		Open water facility may present safety concerns. Recurrent flooding and associated damage.
Recreation	X		Proposed Project includes recreation facilities.
Land Use	X		There are no anticipated changes to land use from the Proposed Project, however new development in the proposed breach inundation area would be subject to North Ogden City Code 10-4-7 Flood Hazard Reduction, which requires that all "new construction shall have the lowest floor (including basement), elevated to or above the base flood elevation." (North Ogden City 2005).
Visual Resources &Scenic Beauty	X		Construction disturbance is anticipated.
Transportation & Infrastructure	X		Proposed construction along and adjacent to transportation facilities. Provide floodwater management system infrastructure.
Noise	X		Construction noise is anticipated.
Scientific Resources		X	There are no scientific resources that would be impacted by the Proposed Project.
Natural Areas		X	There are no natural areas in or adjacent to the Project Area.
Forest Resources		X	The Project Area is located within or adjacent to any forest resources.
Social Issues		X	There are no known social issues that would apply to Proposed Project.
Ecologically Critical Areas		X	There are no ecological critical areas in the general vicinity of the Project Area.

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

- Coastal Zone Management
- Coral Reefs
- Regional Water Resource Plans
- Sole Source Aquifers
- Wild and Scenic Rivers
- Essential Fish Habitat
- Social Issues
- Scientific Resources
- Natural Areas
- Forest Resources

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

- Summary: Office of Management and Budget Fact Sheet – This chapter presents a summary of the entire document and Proposed Project.

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

1.4 Project Area & Existing Conditions

The Project Area is located within the Fourmile Creek Subwatershed (HUC 160201020602) and is contained within Sections 29 and 32, Township 7 North, Range 1 West, Salt Lake Base and Meridian, Weber County, Utah. Specifically, the Proposed Project would be situated between 150 East and 2300 North in North Ogden City (Figure 1). The elevation of the Project Area ranges from 4,370 feet to 4,420 feet above sea level. The extents of the Project Area, including staging areas, are illustrated in the project exhibits found in Appendix B.

The Proposed Project is located in a developed area within North Ogden City. The Project Area contains the North Ogden Canal and pump station, an existing stormwater detention basin, gravel lot, existing constructed pond, and an agricultural hay field. Figures 2 through 9 depict the existing conditions in the Project Area. Dominant vegetation in the Project Area is described in Section 2.4.1.

In its current configuration, the irrigation water moving through the existing diversion from the North Ogden Canal and pump station does not have enough pressure to provide pressurized irrigation to the users south of the diversion. The existing pump station is outdated and has not been in service for several years. Currently, water users use flood irrigation practices for multiple uses including pasture grass farms, small hobby farms and residential landscaping. Pressurizing the system would improve water use efficiency for current and future users. Current users would benefit from an improved water delivery system. All new residential users would be required to connect to the proposed pressurized system and agricultural users would have the option to also connect to the pressurized system. Conversions from flood irrigation to sprinklers would improve future agricultural efficiency from 60% to 80% (NRCS 2014a), however these improvements would be optional for agricultural users and are not part of the Proposed Project.

The Proposed Project would reduce risks associated with flooding. Additional potential project opportunities include improved irrigation and floodwater management, increased agricultural production, and reduced costs to local communities from damages and public safety concerns associated with floodwater.

The North Ogden storm drain and flood control system is comprised of six main drainage channels for the entire city. The existing piping system was only designed to convey a 10-year storm event, while a 100-year storm event was designed to use both the street piping and street right-of-way (ROW), leading to flooding issues. Flood modeling of the Project Area shows that during a 50-year storm event, 45 residential structures and 3 acres of agricultural land would experience flooding. During a 100-year storm event, 58 residential structures, eight commercial structures, and approximately 24 acres of agricultural land would be flooded. 283 residential structures, 12 commercial buildings, and approximately 210 acres of agricultural land would experience flooding during a 500-year event.

Weber County contains multiple recreation opportunities, including the Great Salt Lake, the Wasatch Range and the Uinta-Wasatch-Cache National Forest, which provide numerous year-round recreation opportunities in the form of hiking, hunting, and resort areas, and the Pineview Reservoir, which contains several Blue-Ribbon fisheries and provides abundant recreational boating activities.

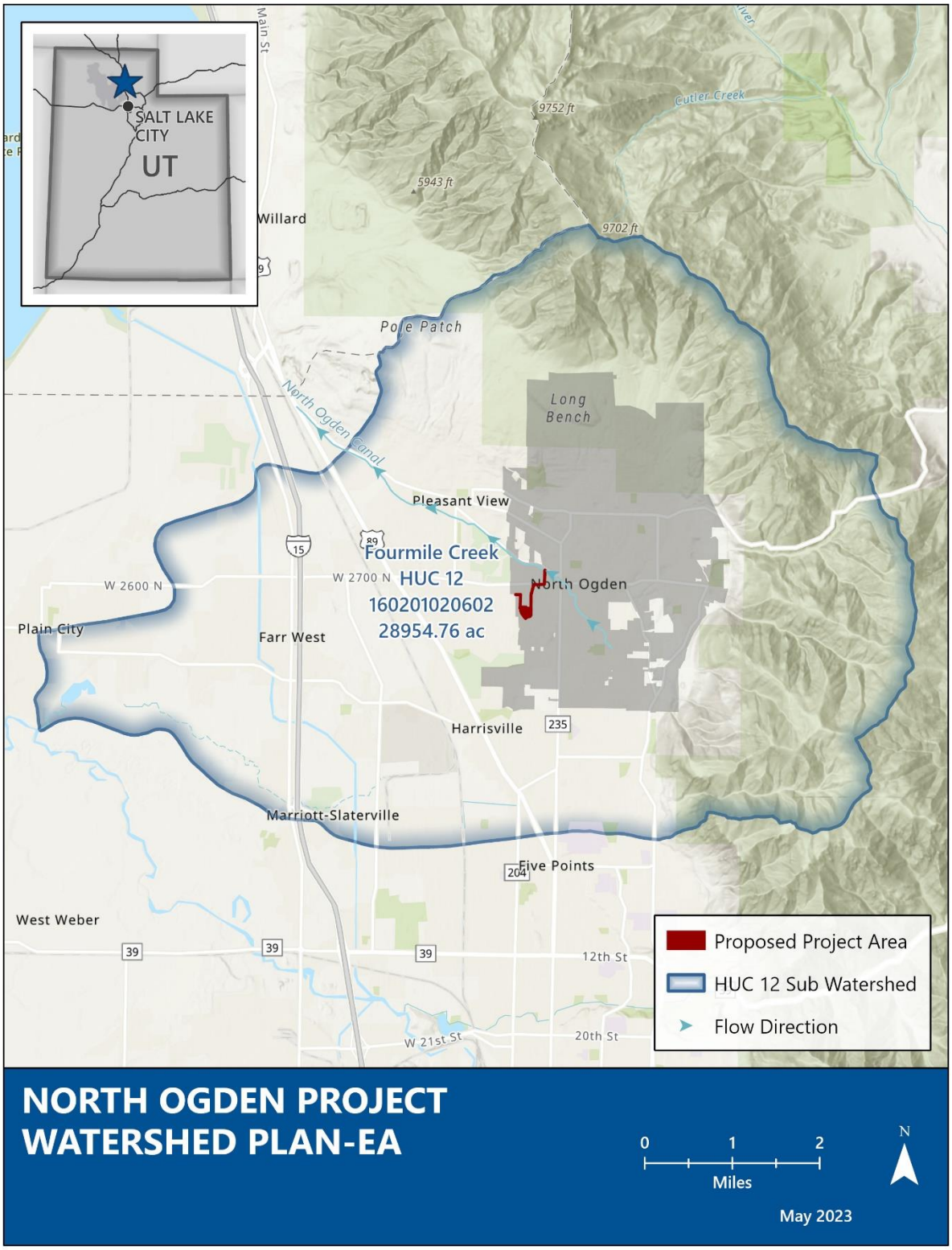

Figure 1. Project Vicinity Map and Watershed Boundary

Figure 2. North Ogden Canal

Figure 2 represents the North Ogden Canal near the pump house and at the start of the Project Area.

Figure 3. Existing Pump Station

At this point, existing irrigation water enters the pipeline that would be replaced as part of the Proposed Project. This pump station would be abandoned, and a new pump station would be constructed at the site of the new reservoir.

Figure 4. Existing Irrigation Pipeline

The existing irrigation water pipeline is buried from the pump station and runs south along the edge of the ROW toward the existing detention basin.

Figure 5. Existing Stormwater Detention Basin

Figure 5 demonstrates the existing detention basin located along 2600 North.

Figure 6. Proposed Irrigation Pipeline

The proposed irrigation pipeline would be placed around the outside edge of the existing detention basin berm.

Figure 7. Existing access in the Project Area

Typical access within the Project Area is obtained by traveling along this gravel road to the existing pond.

Figure 8. Existing Gravel Lot

The existing gravel lot would be the site for a portion of the proposed reservoir located along the existing access road.

Figure 9. Agricultural Field

Pasture within the Project Area is currently used for agricultural grazing. This area would be converted to the pond and recreational area.

Figure 10. Existing Constructed Pond – Located between 2600 N and 2300 N

Emergent vegetation was observed around the perimeter of the existing constructed pond.

2 Affected Environment

The purpose of this chapter is to describe the resources that could be affected by the proposed alternatives. The purpose of describing the affected environment is to define the context in which the impacts could occur. The environmental analysis process has been conducted in compliance with applicable federal, state, and local regulations.

The Project Area is identified in **Figure 1** and Project Maps in Appendix B. **Table 2-1** summarizes the physical setting of the Project Area.

Table 2-1. Physical Setting Summary

Physical Setting Information		Information Source
Location		
The Project Area is located within Sections 29 and 32, Township 7 North, Range 1 West, Salt Lake Base and Meridian, Weber County, Utah. The Project Area is within an urban setting in North Ogden City, Weber County, Utah. Agricultural land uses are also present in the Project Area. The Proposed Project would provide a floodwater storage system where there is currently no stormwater detention within North Ogden city limits.		Public Land Survey System (PLSS) Maps
Topography		
Project Area	4,370 to 4,420 feet above sea level	NGVD 29
Geology		
Project Area	See Section 2.1	UGS 2004; Williams et al. 2014
Soil Characteristics		
Soil Type	See Section 2.1	Web Soil Survey (NRCS 2019)
Description		

2.1 Soils & Geology

2.1.1 Soil Classification

Soils data for this chapter has been gathered from the USDA-NRCS Web Soil Survey data (NRCS 2019) and the associated Soil Survey of the Davis-Weber Area (USDA SCS 1968). The Soil Map is located in Appendix C. Generally, the Davis-Weber region is part of the valley around the Great Salt Lake, and consists of lake terraces and alluvial fans, which sit below the Wasatch Fault and the peaks of the Wasatch Range to the east. Soils found within the Project Area are listed in **Table 2-2**.

Table 2-2. Soil Classification Summary

Soil Unit Name	Landform	Ecological Site	Slope (%)	Comment	Erosion Hazard Rating
Logan silty clay loam	Lake terraces	Wet Fresh Meadow (R028AY020UT)	0-3	Alluvium and/or lacustrine deposits	Slight
Roshe Springs silt loam	Lake terraces	Wet Fresh Meadow (R028AY020UT)	0-3	Alluvium and/or lacustrine deposits	Slight
Woods Cross silty clay loam, drained	Flood plains	-	0-3	Alluvium	Slight

2.1.2 Prime & Unique Farmlands

Farmland classification identifies soil types as prime farmland, unique farmland, farmland of statewide importance, or farmland of local importance. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It can be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. Unique farmland is not based on national criteria, but instead is based on farmland that is uncommon in areas where there is a special microclimate. Farmland of statewide importance is land that does not meet the criteria for prime or unique farmland, but instead is delineated by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Land is considered farmland of local importance for the production of food, feed, fiber, forage, and oilseed crops in areas that are not identified as being important nationally or statewide (NRCS 2012a). This farmland is identified by the appropriate local agencies.

Farming is of considerable importance to the Davis-Weber area, however, the amount of available farmland continues to decrease due to increased development. Most of the remaining farmland in the Davis-Weber region is irrigated, and the principal crops are orchard fruits, grain and truck crops, sugar beets, or improved pasture and hay crops (USDA 2017). The farmland classification of the mapped soil types in the Project Area are listed in **Table 2-3**. The Soils Map is shown in Appendix C.

Table 2-3. Farmland Classification of Soils in Project Area

Soil Unit Name	Rating	Acres in Project Area	Percent of Project Area
Logan silty clay loam, 0 to 3 percent slopes	Farmland of statewide importance	6.4	49.6%
Roshe Springs silt loam, 0 to 3 percent slopes	Not prime farmland	4.5	34.2%
Woods Cross silty clay loam, drained, 0 to 3 percent slopes	Farmland of statewide importance	2.1	16.2%
Totals for Area of Interest		13.0	100.0%

2.1.3 Geology

The Project Area is situated at the base of the western slope of the Northern Wasatch Mountains, and just west of the North Ogden City center. The western side of the Wasatch Mountains forms the eastern boundary of the Basin and Range physiographic province, which starts at the Wasatch Fault and extends westward (Williams, et al. 2014). Geologic units in the immediate vicinity of the Project Area were identified using a 7.5' geologic map of the Ogden and Plain City Quadrangle (UGS 2004). The Geologic Map on North Ogden is located in Appendix C. The geologic units include the following:

- Young, alluvial-fan deposits, undivided (Qafy) – Holocene to upper Pleistocene poorly to moderately sorted, pebble to cobble gravel with boulders.
- Minor younger alluvial and marsh deposits (Qml) – Clay, silt, fine-grained sand with minor gravel; contains minor younger alluvial and marsh deposits and possible lacustrine deposits.
- Mostly interbedded pebble and cobble gravel and sand (Qlg) – Varies from clast supported to only rare gravel clasts in a matrix of sand and silt.
- Disturbances that obscure or original deposits or rocks by cover or removal (Qh).

2.1.4 Landslides

Based on the 7.5' geologic map of the Ogden and Plain City Quadrangle landslide deposits are not located within the Project Area (UGS 2004). The closest landslide deposit to the Project Area is located approximately two miles to the east and is topographically cross-gradient relative to the Project Area. The landslide area does not appear to present a threat to the debris basin based on the distance and topographic gradient relative to the Project Area. Two miles to the east of the Proposed Project, there are areas susceptible to shallow and/or deep-seated landslides.

2.1.5 Seismology

The Intermountain Seismic Belt (ISB) is a north-trending zone of historical seismicity that roughly coincides with the edge of the Basin and Range Physiographic Province. The ISB runs more than 1,500 km (932 miles) from Montana down to northern Arizona and southern Nevada (Williams, et al. 2014). The ISB includes major active faults within Utah, such as the Wasatch Fault Zone in northern Utah. The Wasatch Fault is a normal fault that exhibits predominantly vertical movement with the west side of the fault displaced down to the east. This fault has abundant evidence of surface-breaking events during the Holocene. Within the fault area, there is abundant evidence of late Quaternary normal faulting. There is also abundant evidence of historic seismicity, most of

it characterized by shallow, small magnitude events with periodic larger surface breaking earthquakes of magnitude 7.2 – 7.5. The Wasatch Fault Zone is located approximately two miles from the Proposed Project location and could produce an earthquake with magnitude as high as 7.5 on the Richter Scale. Should an earthquake occur, the Proposed Project location sits within an area accepted to have high to moderate liquefaction potential (UGS 2008). Liquefaction and Fault Zone Maps are located in Appendix C.

2.2 Water Resources

The northern portion of Utah is hydrologically within the Great Basin Region. The Great Basin Region is categorized into sub-regions, basins, accounting units, cataloguing units, watersheds, and subwatersheds. The Proposed Project is situated in the Great Salt Lake Sub-Region, more specifically the Weber Basin. The Weber Basin encompasses 1,571,254 acres; 99% of the Weber Basin is in Utah (Ramsey et al. 2009). Weber County falls within the boundaries of the Lower Weber Hydrologic Unit (HUC 16020102). There are four subwatersheds in the Lower Weber Hydrologic Unit: Mill Creek, West Weber-Weber River, Outlet Weber River-Frontal Great Salt Lake, and Fourmile Creek. The Proposed Project is part of the Fourmile Creek subwatershed (HUC 160201010602) and covers approximately 28,936 acres. Fourmile Creek subwatershed covers an area from Ben Lomond Peak to approximately Eyrie Peak on its eastern boundary along the Wasatch Mountains and west into Plain City, Utah. It consists of mountains, areas that are entirely urbanized, areas with an abundance of deciduous trees, and areas with more open scrub oak-sage, and transition areas with a variety of vegetation and wildlife.

2.2.1 Surface Water & Water Quality

The Clean Water Act (CWA) was enacted in 1972 with the purpose of regulating the discharge of pollutants into Waters of the United States. Section 303(d) of the CWA requires states to identify waters that “do not, or are not expected to meet water quality standards with current pollutant control technologies alone,” these are called impaired waters (EPA 2018a). Under the CWA, states must establish standards for the maximum amount of a pollutant that can be discharged into an impaired waterbody; this standard is called a Total Maximum Daily Load (TMDL).

Since 1995, 25 TMDLs have been established for waterbodies within the Lower Weber Hydrologic Unit. The pollutants addressed in these TMDLs are dissolved oxygen, ammonia, chlorine, phosphorus, total residual chlorine, copper, biochemical oxygen demand (BOD), residual chlorine (chlorine demand), mercury, and total phosphorus (EPA 2017b; EPA 2018b). Within the Fourmile Creek subwatershed, there is one active TMDL in the Warren Canal/Weber River, which is located 4.5 miles southwest of the Proposed Project location. Pineview Reservoir, which feeds into the North Ogden Canal, is listed as impaired with TMDLs for total phosphorous, dissolved oxygen and temperature. Nonpoint source pollution is identified as the cause of these impairments (EPA 2017b).

2.2.2 Hydrology

The primary sources of natural hydrology for the North Ogden vicinity are numerous groundwater springs, and the nearby Pineview Reservoir, which stores water from multiple smaller streams and the North, Middle and South Forks of the Ogden River. The outlet of the Pineview Reservoir flows into the mainstem Ogden River. The Environmental Protection Agency (EPA) WATERS GeoViewer illustrates that there are seven catchments in the Fourmile Creek subwatershed (EPA 2017b). A catchment is the area where rainfall drains and flows, eventually into collecting waterbodies.

North Ogden City is located in the center of two large catchment areas, together encompassing more than 40 square miles (approximately 26,193 acres). The existing constructed pond is located in a large, 19.5 square mile (approximately 12,454 acre) catchment area (EPA 2017b).

The North Ogden drain system currently serves all areas within the City boundaries. Six main drainage channels convey water through the City: Barrett Canyon, Willow Springs, Mountain Water, Rice Creek, North Ogden Canyon, and Coldwater. These drainage channels are collected, and the floodwater are transferred through the North Ogden drain system. Several large regional basins are located throughout the City limits with the purpose of acting as debris and detention basins during large flood events.

2.2.3 Water Rights

All state waters are designated as public property in the State of Utah. The Utah Division of Water Rights explains that a water right is “a right to divert (remove from its natural source) and beneficially use water” (Utah Division of Water Rights 2011). The North Ogden Irrigation Company maintains a water right [maximum of 45 cubic feet per second (cfs)] to the North Ogden Canal. North Ogden City also maintains a water right to the North Ogden Canal (Utah Division of Water Rights 2020). The flowrate is initially estimated at 5 cfs and would increase over time to approximately 9 cfs.

2.2.4 Groundwater & Water Quality

Since approximately 1987, North Ogden, Utah has obtained most of its municipal water supply from groundwater from a well field in Ogden Valley in addition to surface water from Pineview Reservoir. North Ogden and the Project Area are approximately eight miles from the primary recharge area for the Ogden Valley in Weber County, Utah. Recharge areas for the principal valley-fill aquifer for Ogden Valley are centralized between the Bear River Range and the Wasatch Range, which is also the location of the Pineview Reservoir near the cities of Huntsville and Eden, Utah. Deep wells in the Ogden Valley access groundwater that is recharged from the valley-fill aquifer of the Ogden Valley, which is located east-northeast of North Ogden City.

2.2.5 Waters of the U.S. including Wetlands

A Water Resources Assessment (WRA) was conducted on May 24, 2018 by J-U-B ENGINEERS, Inc. (J-U-B) for the Proposed Project. The WRA was prepared in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* and the *Arid West Regional Supplement* (Version 2.0). The entire survey area was assessed based on topography, presence or absence of dominant hydrophytic vegetation and/or surface hydrology. Where vegetation indicated any potential for hydric soils, soil pit sampling was conducted, and the results were documented in accordance with the *U.S. Army Corps of Engineers (USACE) Arid West Regional Supplement*.

The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) suggests that a portion of the study could contain wetlands (NWI Maps in Appendix C; USFWS 2020d). The WRA split the Proposed Project into three distinct sites (see the Water Resource Assessment in Appendix E). The WRA concluded that Sites 1 and 2 are indicative of upland sites (JUB 2018). The WRA stated that the constructed pond at Site 3 would likely not be considered preamble waters because the feature is artificial and not connected to any known jurisdictional water feature (JUB 2018).

2.2.6 Floodplain Management

Under Executive Order 11988, federal agencies must avoid adversely impacting floodplains, directly or indirectly. Floodplains are “lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year” (EPA 1977).

The Federal Emergency Management Agency (FEMA) is responsible for identifying and categorizing flood hazard areas throughout the country. Often flood hazard areas are discussed in relation to special flood hazard area (SFHA), which have a 1-percent annual chance of flood. The 1-percent annual chance of flood is also known as the base flood, or 100-year flood. Activities in the 100-year floodplain can threaten human safety and property, if not properly mitigated. Floodplain protection is essential to ensure that the flood carrying capacity is sufficient, and that flooding does not extend beyond designated flood hazard areas.

FEMA develops Flood Insurance Rate Maps (FIRMs) that illustrate the various flood hazard areas in a location. Examples of some SFHAs are Zone A, Zone V, Zone VE, and Zones V1-V30. Areas that have a 0.2-percent annual chance of flooding are referred to as the 500-year flood. Moderate flood hazard areas are the areas between the 100-year floodplain boundary and the 500-year floodplain boundary (Zone B and Zone X – shaded). If an area is outside of the 100-year flood and above the 500-year flood elevation there is a minimal flood hazard risk (Zone C or Zone X – unshaded).

The FEMA Firmette Panel #49057C0211E, effective on 12/16/2005 designates the Project Area as being in a minimal flood hazard area (Zone X – unshaded) (Floodplain Map in Appendix C; FEMA 2005).

2.2.7 Climate Change

Recent studies provide evidence that anthropogenic climate change has the potential to significantly impact water resources and the hydrologic cycle in the Southwestern United States. The *Assessment of Climate Change in the Southwest United States* evaluated projected climate changes for the 21st Century in the Southwestern United States, as compared to historic climate data. This evaluation indicated that increases in temperature, frequent climate variations (temperature and precipitation), and reductions in snowpack and runoff would be characteristic of the Southwestern States’ climate during the 21st Century (Garfin et al. 2013).

2.2.7.1 Local Climate

A variety of factors influence Utah’s climate including its latitude and elevation, average storm paths over the Intermountain Region, mountain ranges (Sierra Nevada, Cascades, Rocky Mountains), and the proximity of the state to the Pacific Ocean and Gulf of Mexico. Temperatures are dependent on altitude and latitude, with mountainous regions having cooler temperatures, and lower elevation areas having warmer temperatures. In general, the winter and early spring are marked by low temperatures and snowfall. Late spring brings warmer temperatures that melt the mountain snowpack. Summers in Utah tend to be hot with low humidity. Precipitation varies throughout the state, from an average of less than five inches in the Great Salt Lake area to more than 40 inches in the Wasatch Mountains. The Project Area averages 22.5 inches of rainfall and 50.0 inches of snowfall annually (NOAA 2020).

2.3 Air Quality

2.3.1 Clean Air Act / National Ambient Air Quality Standards

The Clean Air Act (CAA) was enacted in 1970 with the purpose of protecting human health and the environment from the negative effects associated with air pollution. The CAA established national ambient air quality standards (NAAQS) for criteria pollutants, namely ozone (O_3), particulate matter (PM), lead (Pb), sulfur dioxide (SO_2), carbon monoxide (CO), and nitrogen dioxide (NO_2). Criteria pollutants are chemicals known to be of concern for human health, property, and the environment.

Counties, and portions of counties in the United States are designated according to their adherence to the NAAQS defined in the CAA. Regions can be designated as “attainment,” “nonattainment,” or “maintenance” areas. Attainment areas are defined by the CAA as, “any area that meets the national primary or secondary ambient air quality standard for the pollutant.” Nonattainment is defined as “any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.” There are two classes of nonattainment: serious and moderate. When a region is deemed to be in nonattainment, the region is required by the CAA to implement a State Implementation Plan (SIP) to achieve the NAAQS for each pollutant within timeframes established under CAA. Attainment areas implementing a maintenance plan, or SIP, are commonly referred to as maintenance areas.

According to the EPA Green Book, portions of Weber County, Utah are considered to be in non-attainment: Salt Lake City (PM-2.5) and Northern Wasatch Front (8-hour ozone). From 1995 to 2019, Ogden, Utah was in non-attainment for PM-10. In 2020, the area was designated to maintenance. From 1992 to 2000, Weber County was in non-attainment for carbon monoxide. Since 2001, the County has been in attainment for this criteria pollutant, with the implementation of a maintenance plan, or SIP (EPA 2020).

The General Conformity Rule (Section 176(c)(1)) of the CAA requires all federal actions, including licensing, permitting, approval, or financial assistance, to conform to approved implementation plans. Projects with a federal nexus must not violate NAAQS, contribute to the increase in the frequency or severity of existing violations, or impact the timeliness of attainment. The Project Area is located in the Fourmile Creek subwatershed which contains North Ogden City, Pleasant View, Farr West, Harrisville, and Marriott-Slaterville. None of the aforementioned cities are in non-attainment or maintenance areas. Therefore, the General Conformity Rule does not apply to the Proposed Project.

Triennially, the State of Utah inventories emissions for several criteria pollutants including: CO, nitrogen oxides (NO_x), PM-10, PM-2.5, sulfur oxides (SO_x), and volatile organic compounds (VOC). The 2014 emissions inventory included 360-point sources, 194 area sources, and 12 mobile sources (UDEQ 2017). The most recent emissions inventory data for Weber County is detailed in **Table 2-4** below.

Table 2-4. 2014 Triennial Emissions Inventory (tons/year)

Area	CO	NO_2	PM-10	PM-2.5	SO_2	VOC
Weber County	26,731.20	4,605.81	7,481.73	1,414.32	50.19	11,658.57
Utah	549,527.57	172,115.87	178,899.72	35,391.93	26,571.48	951,414.96

2.3.2 Climate & Greenhouse Gases

Greenhouse gases (GHG) are those gases which trap heat in the atmosphere. Data regarding GHGs, regulations and emissions sources are summarized from the EPA website (EPA 2017a). GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases such as hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6). These GHGs are introduced into the atmosphere by a variety of sources, including production of electricity, private and commercial transportation, oil and gas production, commercial and residential practices, and agriculture. In Utah, emissions inventories are conducted triennially.

In 2007, the Center for Climate Strategies (CCS) prepared a report for Utah Department of Environmental Quality (UDEQ) to evaluate historic and projected GHG emissions in Utah through the year 2020 (CCS 2007). In 2005, activities in Utah accounted for approximately 1% of the total gross GHG emissions in the United States. From 1990 to 2005, Utah's gross GHG emissions increased by 40%, compared to a 16% national increase. The top contributors of GHG emissions in Utah are in-state production of electricity, transportation, and industrial fuel use. The CCS report indicated that current trends of GHG emissions would result in a 95% increase in emissions from 1990 to 2020 (CCS 2007).

2.4 Plants

One method of organizing and categorizing landscape variations among states involves the use of ecoregions. Ecoregions are large geographic units that have common climatic, vegetation, and landform characteristics. The United States Forest Service (USFS) uses the Bailey Ecoregions guide to define geographic areas; the Bailey Ecoregions delineation organizes landscapes hierarchically based primarily on climatic and geologic differences. The lowest landscape unit in Bailey Ecoregions is the "section." The western half of Weber County is in the Bonneville Basin section and the eastern half, which includes the Project Area, is in the Overthrust Mountains section.

Extensive variation in vegetation and other environmental characteristics exist within the Ecoregion sections. Therefore, when considering smaller areas, like the Project Area, it is important to distinguish between the different types of ecosystems that may be present at the section ecoregion level. An effective method for doing so is the application of life zones, which are dependent on precipitation and temperature. Since both precipitation and temperature are tied to elevation, the USDA-NRCS uses seven life zones defined by elevation. Listed in descending elevation, the life zones are alpine, subalpine, high mountain, mountain, upland, semidesert, and desert.

The Project Area is located in the upland life zone, on the border of the mountain, high mountain, and subalpine life zones associated with higher elevations in the Wasatch Mountains. The upland life zone dominates the valleys and basins of the Wasatch and Uinta Mountains, which is the Major Land Resource Area (MLRA) used by USDA-NRCS to describe the geographic area in question (Ramsey and West 2009).

2.4.1 Dominant Vegetation Communities

The typical land cover present in the upland zone includes sagebrush, pinyon and juniper trees, oak and mountain brush, and the ponderosa pine ecosystem. However, the Project Area is located in a previously disturbed area dominated by residential and urban development, as well as agriculture (Ramsey and West 2009).

A site visit was conducted on May 24, 2018, by J-U-B. During this site visit, upland and ruderal, weedy species were identified as the dominant vegetative community within the Project Area, while wetland fringe hydrophytic vegetation was observed within the perimeter of the existing constructed pond. Species identified throughout the Project Area are included in the following table. Many of the species identified within the Project Area maintain consistency with vegetation found in previously disturbed settings.

Table 2-5. Plant Species within the Project Area

Plant Species – Common Name (*Scientific Name*)		
Cheatgrass *(Bromus tectorum)*	Kentucky bluegrass *(Poa pratensis*)	Chicory *(Cichorium intybus)*
Teasel *(Dipsacus fullonum)*	Orchardgrass (*Dactylis glomerata*)	Foxtail barley *(Hordeum jubatum)*
Alfalfa *(Medicago sativa)*	White clover (*Trifolium repens*)	Canada thistle *(Cirsium arvense)*
Dandelion *(Taraxacum officinale)*	Reed canary grass *(Phalaris arundinacea)*	Common reed *(Phragmites australis)*
Coyote willow *(Salix exigua)*	Baltic rush *(Juncus balticus)*	Hardstem bulrush *(Schoenoplectus acutus)*

2.4.2 Special Status Plant Species

The Endangered Species Act (ESA) was established in 1973 with the intention of protecting and conserving endangered and threatened species and their habitat. Federal agencies must comply with the regulations set forth in the ESA.

To identify species of concern associated with the Proposed Project actions, a species list was obtained from the USFWS Information for Planning and Consultation (IPaC) system (Biological Evaluation in Appendix E; USFWS 2020c). According to the IPaC Report dated June 30, 2020 and updated on April 18, 2023, no ESA-listed plant species have the potential to exist within the Project Area (USFWS 2020a).

On August 21, 2018, the Utah Division of Wildlife Resources (UDWR) provided a response letter regarding information on ESA plant species and Utah state-listed plant species in the vicinity of the Proposed Project (Biological Evaluation in Appendix E). The UDWR did not have records of any records of occurrence for any Utah state-listed plant species within a two-mile radius of the Project Area.

2.4.3 Noxious Weeds & Invasive Plants

According to Executive Order 13122, projects with a federal nexus must not “cause or promote the introduction and spread of invasive species in the U.S. or elsewhere.” Noxious weeds are considered harmful to the environment due to their ability to quickly reproduce and outcompete other species. The Utah Noxious Weed Act was enacted to provide a means of controlling and minimizing the negative impact of noxious weeds on the environment and economy.

Utah has a total of 54 noxious weeds (Utah Weed Control Association 2018). According to the Weber County Weed Department, the 18 most noxious weeds in Utah are included in the following table. The only noxious weed observed in the Project Area during the May 24, 2018 site visit was Canada thistle.

Table 2-6. Utah Noxious Weed List

Plant Species – Common Name (*Scientific Name*)		
Bermuda grass (*Cynodon dactylon*)	Bindweed (*Convolvulus arvensis*)	Broadleaved peppergrass (*Lepidium latifolium*)
Canada thistle (*Cirsium arvense*)	Dyer's woad (*Isatis tinctoria*)	Johnson grass (*Sorghum halepense*)
Leafy spurge (*Euphorbia esula*)	Musk thistle (*Carduus nutans*)	Quackgrass (*Elymus repens*)
Russian knapweed *Rhaponticum repens)*	Scotch thistle (*Onopordum acanthium*)	Whitetop (*Lepidium draba*)
Squarrose knapweed *Centaurea virgata*),	Diffuse knapweed (*Centaurea diffusa*)	Yellow starthistle (*Centaurea solstitialis*)
Medusahead rye *Taeniatherum caput-medusae*)	Spotted knapweed (*Centaurea maculosa*)	Purple loosestrife (*Lythrum salicaria*)

The Weber County Weed Department also lists several invasive species found in Utah, shown in the following table.

Table 2-7. Weber County Invasive Weeds

Plant Species – Common Name (*Scientific Name*)		
Black henbane (*Hyoscyamus niger*)	Camelthorn (*Vachellia erioloba*)	Dalmatian toadflax (*Linaria dalmatica*)
Goatsrue (*Galega officinalis*)	Jointed goatgrass (*Aegilops cylindrica*)	Purple starthistle (*Centaurea calcitrapa*)
St. John's wort (*Hypericum perforatum*)	Silverleaf nightshade (*Solanum elaeagnifolium*)	Squarrose knapweed (*Centaurea virgate)*

Two of the most recent invasive species observed in Weber County are poison hemlock (*Conium maculatum*) and Japanese knotweed (*Fallopia japonica*) (Weber County Weed Department 2004).

2.4.4 Riparian Areas

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

Riparian habitat exists around the constructed pond within the Project Area. Some hydrophytic vegetation exists along the existing constructed pond that is adjacent to the proposed piping alignment for the North Ogden Project, such as reed canary grass (*Phalaris arundinacea*), common reed (*Phragmites australis*), coyote willow (*Salix exigua*), Baltic rush (*Juncus balticus*), hardstem bulrush (*Schoenoplectus acutus*), and western blueflag iris (*Iris missouriensis*). This vegetation is induced by the presence of stormwater during spring runoff and during storm events. Except for the existing constructed pond, there is no open water in the Project Area.

2.5 Animals

2.5.1 Fish

2.5.1.1 Fish Habitat

The Magnuson-Stevens Act of 1976 governs marine fisheries management in the United States federal waters. The purpose of the Act is to promote the sustainability of marine fisheries from biologic and economic standpoints. Utah does not contain any Essential Fish Habitat as defined in the Magnuson-Stevens Act, and no proposed or designated essential fish habitat is located within the Project Area. The existing constructed pond may contain fish stocked by the landowner; however, the presence of stocked fish species is unconfirmed at this time.

Fish habitat is present in water bodies within the Fourmile Creek subwatershed, including the Pineview Reservoir which is directly connected to the North Ogden Canal. However, the North Ogden Canal is dewatered annually and is not considered natural fish habitat. There is also an existing constructed pond located within the project area, which is a humanmade feature with no connectivity for fish to move beyond the constructed pond.

2.5.1.2 Fish Species

Pineview Reservoir is directly connected to the North Ogden Canal. It is located at 4,900 feet of elevation and is 15 miles from North Ogden, Utah. Pineview Reservoir is identified as a Blue-Ribbon water by UDWR, meaning it is an environmentally productive water and contains a number of fisheries, such as:

- Black bullhead (*Ameiurus melas*)
- Black crappie (*Pomoxis nigromaculatus*)
- Bluegill (*Lepomis macrochirus*)
- Common carp (*Cyprinus carpio*)
- Largemouth bass (*Micropterus salmoides*)
- Smallmouth bass (*Micropterus dolomieu*)
- Tiger muskie (*Esox masquinongy X Esox lucius*)
- Yellow perch (*Perca flavescens*)

The Willard Bay Reservoir has connectivity to waterbodies located within the Fourmile Creek subwatershed. This reservoir contains numerous Blue-Ribbon Fisheries for both sport and non-sport fish such as:

- Black crappie
- Bluegill
- Channel catfish (*Ictalurus punctatus*)
- Common carp
- Largemouth bass
- Smallmouth bass
- Walleye (*Sander vitreus*)
- Yellow perch
- Green sunfish (*Lepomis cyanellus*)
- Brook stickleback (*Culaea inconstans*)
- Gizzard shad (*Dorosoma*)
- Logperch (*Percidae*)
- Spottail shiner (*Notropis hudsonius*)
- Utah sucker (*Catostomus ardens*)

The existing stormwater detention basin has connectivity to the North Ogden Canal, and the canal is connected to Pineview Reservoir. With connection to Pineview Reservoir, some fish may enter the canal, however, suitable habitat for their persistence is not present in the canal because of diversion barriers, screened pipe connections, and the annual dewatering of the canal. Fish that enter the canal from Pineview Reservoir would not be able to enter the existing constructed pond. The existing constructed pond may have been stocked by the landowner. Resident fish may be present in the constructed pond, but these fish would not be able to move into the canal, nor is there connection from the constructed pond to any other body of water.

2.5.2 Wildlife

2.5.2.1 Wildlife Habitat

The Project Area is surrounded by residential and agricultural land uses, which limits and divides the suitable wildlife habitat. As a result, the diversity and abundance of wildlife species found in the Project Area is likely more limited than less disturbed areas. Wildlife species in the Project Area likely include a wide range of native and non-native migratory birds, resident birds, mammals, amphibians and reptiles. Potential habitat for these species within the subwatershed would include riparian areas, fence rows, deciduous trees, and upland scrub oak-sage steppe habitat. However, the Project Area and the surrounding vicinity has experienced substantial habitat loss and degradation due to urbanization and industrialization.

A review of general habitat requirements for wildlife species common to Weber County in the project vicinity indicates that the existing Project Area conditions likely only provide limited, marginal habitat for most wildlife species. Within the Project Area, the landscape is disturbed by regular maintenance of existing man-made infrastructure and equine grazing practices. The constructed pond likely provides respite to small numbers of birds and passing waterfowl and may contain fish stocked by the landowner. The larger area surrounding the Proposed Project location is urbanized with heavy suburban influences such as roads, houses, yards, industrial and commercial development. This area contains little wildlife habitat and is likely used primarily by small mammals and birds, such as raccoons (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and opossum (*Didelphis virginiana*) among other small mammals and avian species. Within the urban area, there is an abundance of deciduous trees, which likely provide perching and hunting habitat for raptor species, such as the red-tailed hawk (*Buteo jamaicensis*).

The Fourmile Creek subwatershed includes an area that transitions from urban land uses to more open scrub oak-sage steppe habitat. In this geographical position, there is likely more abundant habitat for wildlife species, such mule deer (*Odocoileus hemionus*), California quail (*Callipepla californica*), mountain cottontail rabbit (*Sylvilagus nuttallii*), various shrews, moles, mice and rats.

There is no winter or summer range for Rocky Mountain elk (*Cervus elaphus nelsoni*) within the Project Area and the larger Fourmile Creek subwatershed. Additionally, no critical value, high value, substantial value, or limited value habitat for moose (*Alces alces*) exist within the subwatershed, though critical value habitat borders the subwatershed boundary (UDWR-UCDC 2017; UDWR-UCDC 2020). Within the Fourmile Creek subwatershed, there are no UDWR wildlife management units, or wildlife management areas (WMA). Mule deer (*Odocoileus hemionus*) habitat does overlap the northeastern portion of the Fourmile Creek Subwatershed, and mountain goat (*Oreamnos americanus)* habitat exists just outside the subwatershed boundary. Lastly, there is no occupied, winter or brood habitat for the Greater Sage Grouse (*Centrocercus urophasianus*) within the Fourmile Creek subwatershed.

2.5.2.2 Wildlife Species

As previously described, the Project Area is located in the Wasatch and Uinta Mountains MLRA, more specifically in the upland climatic zone of the Wasatch Mountains. Large predators typically found in the upland life zone are cougar (*Puma concolor*) and coyotes (*Canis latrans*). Other animals in the upland ecosystems include mule deer, elk, squirrels and other small rodents, and a variety of birds. Wildlife species found in the Project Area include a variety of birds, small mammals and rodents, amphibians, reptiles, and farm animals.

2.5.3 Special Status Animal Species

2.5.3.1 Endangered and Threatened Species and Species of Concern

A Biological Evaluation (BE) was prepared and submitted to the USDA-NRCS to comply with Section 7(c) of the ESA (see Biological Evaluation in Appendix E) and to field verify the presence or absence of the aforementioned ESA- or state-listed species. The BE discussed specific species characteristics and habitat conditions necessary for the presence of wildlife, as well as potential impacts that may result from the Proposed Project (see Appendix E). As part of the BE, the USFWS IPaC database was referenced to determine the potential presence of any ESA-listed species within the Project Area, a Utah state-listed species list was accessed through the Utah Conservation Data Center (UCDC), and the UDWR Utah Natural Heritage Program Database was also consulted to determine records of ESA-listed and Utah state-listed species occurrence within the Project Area.

According to the IPaC Report (dated April 2023), there are no endangered or threatened ESA-listed animal or fish species with the potential to exist within the Project Area (Biological Evaluation in Appendix E; USFWS 2020a). There is no designated critical habitat within the Project Area. One candidate species, the Monarch butterfly (*Danaus plexippus)* has the potential to exist within the Project Area. Since the Monarch butterfly is not formally listed on the ESA, no formal effects determination for the species is required at this time. If USFWS changes the species status prior to implementation of the Proposed Project, then reevaluation and coordination with USFWS may be required.

The UCDC Utah State-listed Species list included 22 aquatic and terrestrial species listed as wildlife species of concern, species receiving special management under a conservation agreement in order to preclude the need for federal listing, or federally listed or candidate species under the ESA (S-ESA). Based on the species data obtained from the UCDC, three ESA-listed species are known to have occurred within Weber County, Utah, which are included in the **Table 2-8** below.

Table 2-8. Summary of Weber County Listed Species Identified by UDWR (June 30, 2020)

Common Name	Scientific Name	ESA Status	Suitable habitat in Project Area?
Gray Wolf	*Canis lupus*	Endangered	No
June Sucker	*Chasimistes liorus*	Endangered	No
Yellow-billed Cuckoo	*Coccyzus americanus*	Threatened	No

The following sections detail the aforementioned species descriptions and habitat requirements.

Gray Wolf

Wolves have evolved to avoid people due to many centuries of hunting pressure from humans. The gray wolf requires vast forests and mountain foothills for hunting, typically far from humans. They show little preference for special habitats, as long as there is food available. Wolves generally travel in packs of up to 25 animals. The dominant male (alpha male) and dominant female (alpha female) are the decision-makers for the group and determine the time and location of hunting. A single territory for a pack ranges between 100 to 600 square miles. On a single hunt they may travel over 50 miles in pursuit of food (Maas 1997).

Generally, wolves avoid interactions with humans. Given the Project Area is highly disturbed, urban area that has been significantly altered by suburban and agricultural influences, it does not contain suitable habitat for gray wolf.

June Sucker

The June sucker is endemic to Utah Lake and the Provo River in Utah (UDWR 2020; USFWS 1999). Flow alterations, pollution, drought, and the introduction of non-native fish have been identified as causes for decline (UDWR 2020). Although June sucker are endemic to Utah Lake, the decline of the species has led to small population introductions in other locations in order to prevent extinction of the species. The species feeds primarily on zooplankton in the middle of the water column. June suckers inhabit shallow and protected areas of Utah Lake, except when spawning (NatureServe 2019; Sigler and Sigler 1987). Spawning occurs in June in shallower riffles over coarse gravel and cobbles within lower portions of the Provo River (NatureServe 2019).

The water features of the Project Area (North Ogden Canal and constructed pond) do not provide habitat for the June sucker. The North Ogden Canal is not connected to any known fisheries where the June sucker has been introduced. The existing constructed pond is not connected to any known water features, but is likely fed by a small spring, which is not connected to any known fisheries containing the June sucker.

Yellow-billed Cuckoo

The yellow-billed cuckoo is listed as threatened under the ESA. The western yellow-billed cuckoo is a federally threatened distinct population segment (DPS) of the species that is understood to occur in 13 states, including Utah. It is a neotropical migrant, which winters in South America. Breeding often coincides with the appearance of cicadas, caterpillars, or other large insects (Ehrlich et al. 1992). Yellow-billed cuckoos arrive in Utah in late May or early June and breed in late June through July. Cuckoos typically start their southerly migration by late August or early September (Parrish et al. 1999). Yellow-billed cuckoos are considered a riparian obligate and are usually found in large tracts of cottonwood/willow habitats with dense sub-canopies (UDWR 2020). Suitable breeding and nesting habitat for the species must be at least 300-feet-wide and a minimum of 12 contiguous acres.

The Project Area contains no suitable habitat for the yellow-billed cuckoo. A few coyote willows are scattered at and around the existing constructed pond within the Project Area; however, no large tracts of cottonwood or willow habitat exist within the Project Area.

2.5.3.2 General Habitat Considerations

A review of the general habitat conditions necessary for the state-listed species with potential to occur in Weber County indicates that suitable habitat would not be present within the Project Area

for the remainder of the listed species. Habitat conditions within and surrounding the Project Area are high disturbed with heavy suburban influence, which has substantially altered or degraded previous natural habitat conditions.

The BE concluded that there is no suitable habitat in the Project Area for ESA-listed species, or Utah state-listed species.

2.5.4 Invasive Fish & Wildlife Species

Under Executive Order 13122, "a federal agency shall not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction and spread of invasive species in the U.S. or elsewhere." The USDA-NRCS lists several terrestrial and aquatic species that are considered invasive in the State of Utah, and that may occur within the Project Area. These species include (NRCS 2012b):

- Bullfrog (*Lithobates catesbeianus*)
- Muskrat (*Ondatra zibethicus*)
- New Zealand mudsnail (*Potamopyrgus antipodarum*)
- Nutria (*Myocastor coypus*)
- Quagga mussel (*Dreissena bugensis*)
- Red fox (*Vulpes vulpes*)
- Raccoon (*Procyon lotor*)
- Red swamp (*Procambarus clarkii)*
- Signal crayfish (*Pacifastacus leniusculus*)
- White-tailed deer (*Odocoileus virginianus*)
- Zebra mussel (*Dreissena polymorpha*)
- All non-native, non-sport fish

2.5.5 Migratory Birds/ Bald and Golden Eagles

Six migratory birds were identified on the IPaC Report (dated June 30, 2020 and updated April 18, 2023) as potentially occurring within the Project Area (Biological Evaluation in Appendix E) including:

- Bald eagle (*Haliaeetus leucocephalus*)
- Brewer's sparrow (*Spizella breweri*)
- Green-tailed towhee (*Pipilo chlorurus*
- Virginia's warbler (*Vermivora virginiae*)
- Willet (*Tringa semipalmata*)
- Willow flycatcher (*Empidonax traillii*)

According to the USFWS, the enforcing agency of the Migratory Bird Treaty Act (MBTA), it is "illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nest, or eggs of such a bird except under the terms of a valid permit issued pursuant to federal regulations" (USFWS 2020b). In addition to the MBTA, the Bald and Golden Eagle Protection Act of 1940 (BGEPA) forbids anyone from taking bald eagles, including their parts, nests, or eggs; take is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, collect, molest or disturb" (USFWS 2020c). During the May 2018 site

visit, there were no migratory bird, or bald or golden eagle nests found within or adjacent to the Project Area.

2.6 Human Environment

This section discusses resource categories within the Project Area that related to the human environment, such as: socioeconomics; environmental justice, cultural and historic resources; hazardous materials; land use and recreation; visual resources and scenic beauty; transportation and infrastructure; public health and safety; and noise.

2.6.1 Socioeconomics

The following sections describe the current socioeconomic conditions in the Project Area, as compared to Weber County and the State of Utah. Population and race and ethnicity information is provided at the Project Area level up to the national level. The Proposed Project is located in North Ogden City, which is part of the Ogden-Clearwater Metropolitan Area. Weber County is the fourth most populous county in the State of Utah. North Ogden City contains the third largest population in the county, after Ogden and Roy.

2.6.1.1 Agricultural Statistics

According to the Utah Department of Agriculture and Food (UDAF), livestock inventory numbers in Weber County were dominated by beef cattle, milk cows, and sheep in 2017 (UDAF 2017). The amount of land within Weber County identified as being in farms was 117,415 acres in 2017, and of that amount 27,645 acres were identified as harvested cropland from which crops were harvested, hay was cut, or the land supported orchard crops.

In 2012, there were 1,121 farms in Weber County. According to the 2014 Land Use Survey conducted by the North Ogden City Planning Department, agricultural lands or pasture comprised 21% of the non-urbanized land area in North Ogden City. Since 1997, agricultural lands have decreased significantly from 1,764 acres in agricultural production or pasture to approximately 570 acres in 2014 (Scott and Lund 2014).

Sales from farms in Weber County in 2015 totaled just over $30 million (UDAF 2017). According to the 2012 USDA Census of Agriculture, approximately 36% of principal farm operators considered farming their primary occupation, and the average age of principal operators was 60.6 (USDA 2014). However, there are no active farming operations in the Project Area. There is an open space equine grazing area, but no current farming/agricultural activities occur on the parcel.

2.6.1.2 Population

Table 2-9 shows population data obtained from the 2020 U.S. Census and EPA across multiple geographic levels. Across all geographic levels the majority of the population is between the age of 18 and 64. Since the 2010 U.S. Census, the population has grown approximately 11.9% in North Ogden City, 8.9% in Weber County, 12.2% in Utah, and 5.5% in the United States (Census 2010).

Table 2-9. Multilevel Population Comparison (Census 2020)

Socioeconomic Criteria		Project Area (1-mile radius)[1] (%)[2]	North Ogden City (%)[2]	Weber County (%)[2]	Utah (%)[3]	United States (%)[3]
Total Population		14,010 (100.0%)	18,964 (100.0%)	255,284 (100.0%)	3,151,239 (100.0%)	326,569,308 (100.0%)
Gender	Female	7,279 (52.0%)	9,715 (51.0%)	126,918 (50.0%)	1,564,289 (49.6%)	165,750,778 (50.8%)
	Male	6,732 (48.0%)	9,250 (49.0%)	128,366 (50.0%)	1,586,950 (50.4%)	160,818,530 (49.2%)
Age	< 18	5,745 (41.0%)	7,288 (39.0%)	91,242 (36.0%)	927,569 (29.4%)	37,456,754 (10.3%)
	18 +	9,635 (69.0%)	13,358 (70.0%)	183,431 (72.0%)	1,874,660 (59.5%)	265,848,291 (82.6%)
	20-24					
	25-34					
	35-49					
	50-64					
	65 +	1,410 (10.0%)	2,318 (12.0%)	29,781 (12.0%)	349,010 (11.1%)	23,264,263 (7.1%)

[1]Due to rounding, percentages may not add up to 100.
[2]Data was obtained from the EPA EJSCREEN ACS Summary Report 2016-2020 (EPA 2023).
[3] Data was obtained from the U.S. Census Bureau ACS 2020 5-Year Estimates Subject Tables S0101 (Census 2023a and Census 2023b).

2.6.1.3 Race and Ethnicity

Using data from the 2020 United States Census, the following tables (**Tables 2-10** and **2-11**) identify the race and ethnicity demographics of the Project Area (1-mile radius), North Ogden City, Weber County, State of Utah, and the United States. The State of Utah, North Ogden City, and Weber County are predominantly white. The Project Area has a small Hispanic population (9.0%), as compared to the larger Weber County area with 18.0% of the population being Hispanic.

Table 2-10. Population by Race (Census 2020)

Race	Project Area (1-mile radius)[1, 2]	North Ogden City[2]	Weber County[2]	Utah[3]	United States[3]
Non-Hispanic, White	88.0%	87.0%	76.0%	78.7%	61.6%
Black or African American	0.0%	1.0%	1.0%	1.2%	12.4%
American Indian and Alaska Native	0.0%	0.0%	0.0%	1.3%	1.1%
Asian	1.0%	1.0%	1.0%	2.5%	6.0%
Native Hawaiian and Other Pacific Islander	0.0%	0.0%	0.0%	1.1%	0.2%
Some Other Race	0.0%	0.0%	0.0%	6.7%	8.4%
Two or more races	1.0%	3.0%	3.0%	8.5%	10.2%
Hispanic or Latino	9.0%	9.0%	18.0%	15.0%	18.7%

[1]Due to rounding, percentages may not add up to 100.
[2]Data was obtained from the EPA EJSCREEN ACS Summary Report 2016-2020 (EPA EJSCREEN 2023).

[3] Data was obtained from the U.S. Census Bureau 2020 Decennial Census Tables P1 and P2 (Census 2023a and Census 2023b).

Table 2-11. Population by Ethnicity (Census 2020)

Ethnicity	Project Area (1-mile radius)[1, 2]	North Ogden City[2]	Weber County[2]	Utah[3]	United States[3]
Hispanic	9.0%	9.0%	18.0%	15.0%	18.7%
Non-Hispanic	91.0%	91.0%	82.0%	85.0%	81.3%

[1]Due to rounding, percentages may not add up to 100.
[2] Data was obtained from the EPA EJSCREEN ACS Summary Report 2016-2020 (EPA 2023).
[3] Data was obtained from the U.S. Census Bureau 2020 Decennial Census Tables P1 and P2 (Census 2023a and Census 2023b).

2.6.1.4 Employment and Income

Table 2-12 describes the labor force characteristics for the State of Utah and the Ogden-Clearfield Metropolitan Area. The Ogden-Clearfield Metropolitan Area includes Davis, Morgan, Weber, and Box Elder counties. In June of 2018, approximately 3.5% of the total civilian labor force in Ogden-Clearfield Metropolitan Area was unemployed. The unemployment rate in Utah in June of 2018 was 3.0%.

Table 2-12. Seasonally adjusted labor force characteristics for the Ogden-Clearfield Metropolitan Area and the State of Utah in June of 2018

Category	Ogden-Clearfield Metropolitan Area (%)	Utah (%)
Total Civilian Labor Force	333,300 (100.0%)	1,591,500 (100.0%)
Employed	321,600 (96.5%)	1,543,100 (97.0%)
Unemployed	11,700 (3.5%)	48,400 (3.0%)

(BLS Ogden-Clearfield 2018a; BLS Utah 2018b)

In both the Ogden-Clearfield Metropolitan Area and State of Utah, government is the largest (non-farming) industry, with 20.4% and 16.4% of the population working in this industry respectively (see **Table 2-13**). The Bureau of Labor and Statistics (BLS) excludes farming from labor force data.

According to the USDA National Agricultural Statistics Service's *Utah Agricultural Statistics and Utah Department of Agriculture and Food 2017 Annual Report*, in April 2017, 14,000 farm workers were hired in the Mountain II Region (USDA 2017). The Mountain II Region includes Colorado, Nevada, and Utah. This number is down from 23,000 in July 2016.

Table 2-13. Seasonally adjusted labor force industry distribution for the Ogden-Clearfield Metropolitan Area and the State of Utah in June of 2018

Industry	Ogden-Clearfield Metropolitan Area (%)	Utah (%)
Total Non-Farming	262,400 (100%)	1,453,700 (100%)
Mining, Logging, and Construction	17,900 (6.8%)	110,000 (7.3%)
Manufacturing	33,400 (12.7%)	132,800 (8.8%)
Trade, Transportation, and Utilities	47,400 (18.1%)	228,900 (15.1%)
Information	2,100 (0.8%)	38,100 (2.5%)
Financial Activities	10,100 (3.8%)	86,900 (5.7%)
Professional and Business Services	31,200 (11.9%)	213,700 (14.1%)
Education and Health Services	32,300 (12.3%)	206,200 (13.6%)
Leisure and Hospitality	27,700 (10.6%)	148,700 (9.8%)
Other Services	6,900 (2.6%)	40,400 (2.7%)
Government	53,400 (20.4%)	248,000 (16.4%)

(BLS Ogden-Clearfield 2018a; BLS Utah 2018b)

2.6.1.5 Poverty

As shown in **Table 2-14**, the median income in North Ogden City is $79,194, which is greater than the median income for both Weber County ($64,636) and Utah ($68,374). Consequently, the percentage of individuals living in poverty within North Ogden City is 5.2%, which is less than the persons living in poverty in Weber County (9.4%) and Utah (9.0%).

Table 2-14. Median household income (in 2018 dollars) and poverty

Characteristic	North Ogden City	Weber County	Utah
Median Household Income, 2014-2018	$79,194	$64,636	$68,374
Per Capita Income, 2014-2018	$28,896	$26,492	$28,239
Persons in Poverty	**5.2%**	**9.4%**	**9.0%**

(Census 2010)

2.6.2 Environmental Justice & Civil Rights

Executive Order 12898 requires federal agencies to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority population and low-income populations.”

Minority and low-income populations are considered environmental justice (EJ) populations that are afforded EJ protections. EJ has its legislative roots in Title VI of the Civil Rights Action of 1964, which states that “no person in the United States shall on the grounds of race, color, or national origin be exclude from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance”. Overburdened communities are defined as EJ populations or geographic locations in the United States that potentially experience disproportionate environmental harm and risks (EPA 2020c). Disproportionality can result from a greater vulnerability to environmental hazards, lack of opportunity for public participation, lack of access to safe drinking water and functioning wastewater treatment, or other factors. Overburdened communities experience greater vulnerability when an accumulation of negative or lack of positive environmental, health, economic, or social conditions are present within these populations of places (EPA 2020c).

USDA Departmental Regulation (DR) 5600-002 defines a minority as a person who is a member of the following population groups: black or African American, Hispanic or Latino, Asian American, American Indian or Alaskan Native, and Native Hawaiian and other Pacific Islander. A minority population is “any readily identifiable group of minority persons who live in geographic proximity to, and, if circumstances warrant, migrant farm workers and other geographically dispersed/transient persons who will be similarly affected by USDA programs or activities” (USDA 1997).

The demographics and socioeconomic analysis demonstrates that approximately 13% of the populations of North Ogden City and 24% of Weber County can be considered a minority. Approximately 5.2% of the persons in North Ogden City and 9.4% of the persons in Weber County are below the federal poverty level. Overall, individuals identifying as two or more races and individuals identifying as African American or Asian represent the two largest demographic groups of minority populations in North Ogden City. Individuals identifying as two or more races and Black or African American or Asian represent the two largest demographic group of minority populations in Weber County. Individuals that identify as Hispanic or Latino make up 9.0% of the population in North Ogden while the same group makes up 18.0% in Weber County and 15.0% of the state population.

Low-income is defined as an income bracket in which those persons living in a household have a yearly income that is at, or below, the Health and Human Services (HHS) poverty guideline. A low-income population means “any readily available group or low-income persons who live in geographic proximity to, and, if circumstances warrant, migrant farm workers and other geographically dispersed/transient persons who will be similarly affected by USDA programs or activities” (USDA 1997). Approximately 5.2% of persons in North Ogden City are below the poverty line while the same group makes up 9.4% of Weber County and 9.0% of the state population. As compared to the State of Utah, North Ogden City has a lower percentage of low-income households.

Based on the demographic and socioeconomic analyses, minority and low-income populations (i.e., EJ populations) are not present within the area given that the EJ populations in the Project Area and the surrounding county are not significantly different for the majority of the metrics reviewed. Although there are residents in the Project Area and the surrounding area that qualify for EJ protections (i.e., EJ populations), the community where the Proposed Project would occur does not qualify as an EJ community (i.e., overburdened community).

2.6.3 Cultural & Historic Resources

Several federal statutes and Executive Orders direct the protection and consideration of cultural and historic resources, namely NEPA and the National Historic Preservation Act (NHPA). Under NEPA, federal agencies must consider the effect of federal actions upon historical, archeological, and paleontological resources. In addition, Section 106 of the NHPA requires federal agencies to account for the effects of their actions on historic properties. 36 CFR Section 800.16.l.1 of NHPA defines a historic property as “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) ...” (Code 2004). Pursuant to Section 106 of the NRHP, the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officer (SHPO), and/or Tribal Historic Preservation Officer (THPO) must be consulted to determine whether the Proposed Project could have an adverse effect on NRHP listed and eligible properties.

A cultural resources survey was completed for the Proposed Project’s Area of Potential Effect (APE) on November 8, 2018, by Certus Environmental Services, LLC. The APE for the Proposed Project was defined as a series of linear corridors (approximately 10 meters wide) following the new pipelines and a small polygon surrounding the location of the multi-purpose reservoir, totaling a combined area of 8.3 acres. The cultural resources survey considered cultural resources present in the APE, historic context of the APE, and information about potentially eligible resources in the area. The cultural resource survey did not find any cultural resources in the APE. Based on the findings of the cultural resource survey, the USDA-NRCS archaeologist determined that there are no cultural resources in the Project Area in a letter dated January 8, 2019. SHPO responded with a concurrence letter dated January 10, 2019 (see Appendix A).

2.6.3.1 Tribes

The Uintah and Ouray Reservation is the closest tribal land to the Project Area. The Reservation is located in the northeastern portion of Utah, approximately 70 miles southeast of the Project Area. The Reservation encompasses portions of Summit County, Wasatch County, and Uintah County. No Tribal Reservations are located in the vicinity of the Project Area. There are also no tribal interests in Weber County according to the Tribal Directory Assessment Tool developed by the Office of Environment and Energy, recognized by the Advisory Council on Historic Preservation.

2.6.4 Hazardous Materials

The Resource Conservation and Recovery Act (RCRA) is the primary statute established with the purpose of providing a structure for hazardous waste management. In order for a substance to be considered a hazardous waste, it must first be classified as a solid waste under RCRA. Any material that is abandoned, inherently waste-like, discarded military munition, or recycled in certain ways is considered a solid waste and is subject to RCRA. Hazardous waste is any liquid, solid, gas, or sludge waste with dangerous properties capable of harming human health or the

environment. It should be noted that there are several solid wastes excluded from RCRA's definition of a hazardous waste, even if they do demonstrate hazardous waste characteristics (e.g., household hazardous waste, agricultural waste) (EPA 2018a).

There are 17 solid waste facilities within a 10-mile radius of the Project Area. The UDEQ Interactive Map was used to determine the hazardous and solid waste facilities present within a 0.5-mile radius of the Project Area. Two active underground storage tanks (UST), and one hazardous waste/used oil facility were found within a 0.5-mile radius of the Project Area. None of the identified facilities are situated within or directly adjacent to the Project Area (see the Department of Environmental Quality Map in Appendix C; UDEQ 2018).

The UDEQ Interactive Map identified three active USTs, and one Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site within a 2-mile radius of the Project Area (see Appendix C). Of the listed facilities, none fall within or directly adjacent the Project Area (UDEQ 2018). **Table 2-15** summarizes the hazardous waste facilities identified in the vicinity of the Proposed Project.

Table 2-15. Hazardous Waste Facilities within Two Miles of the Project Area

Hazardous Waste Facility or Site	Type	Location	Proximity to Proposed Project
7-Eleven Gas Station	UST (active use)	416 E 2600 N, North Ogden	Within 0.5 mile
U.S. West	UST (active)	2650 N 450 E, North Ogden	Within 0.5 mile
Common Cents Gas Station	UST (active)	907 N 400 E, Harrisville	Within 2 miles
Your Valet Cleaners	Hazardous Waste and Used Oil	2592 N 400 E, Ogden	Within 0.5 mile
Permaloy Corporation	CERCLA-CERCLIS	2382 North Rulon White Blvd., North Ogden	Within 2 miles

2.6.5 Land Use

Based on the obtained from the EPA WATERS GeoViewer tool, the Fourmile Creek subwatershed is comprised of seven different land covers (see **Table 2-16**). The majority of the subwatershed is defined as "other," meaning that the land cover in this subwatershed is not consistent with the defined land cover classifications/descriptions (EPA 2017b).

Table 2-16. 2011 National Land Cover in the Fourmile Creek Subwatershed

Land Cover	Percent of Watershed
Open Water (11)	0.13
Low Intensity Residential (21)	10.15
Commercial (23)	10.19
Deciduous Forest (41)	12.19
Evergreen Forest (42)	7.77
Mixed Forest (43)	0.04
Other	59.52

In 2015, most of the land in Weber County was owned by private owners (62.4%). The remaining land was either federally owned (18.2%), or state owned (19.3%) (UAC 2017). In 2015, there were 1,121 farms in Weber County, amounting to 117,415 acres (USDA 2017).

Based on data obtained from the Southwest Regional Gap Analysis Project (SWReGAP), an ecosystem mapping project, North Ogden and the Project Area land cover are characterized as agriculture (1) and developed (11) (Ramsey and West 2009).

The Project Area is predominately located in an area zoned for suburban residential use (RE-20). RE-20 designated areas provide a controlled area for single-family residential and agricultural uses (City Code North Ogden [CCNO] 11-7A-1). A portion of the Proposed Project is located in the area zoned for single-family residential use (RE-1-10). RE-1-10 zoned areas provide an area for single-family residential use in three different low-density levels (CCNO 11-7B-1). The North Ogden City Zoning and Land Use Map is located in Appendix C.

The main project component located in RE-20 is the multi-purpose reservoir and associated recreational amenities. Under CCNO 11-7A-2, “public buildings, public park recreation grounds and associated buildings” are considered permitted uses in RE-20 zoned areas. Therefore, the proposed multi- purpose reservoir would be a permitted use in this zone. Similarly, in RE-1-10 zoned areas, “public buildings, public park recreation grounds and associated buildings” are considered permitted uses (CCNO 11-7B-2).

2.6.6 Recreation

Weber County contains many recreation opportunities. The Great Salt Lake is roughly 30 miles west of the Project Area. Further east of the Project Area is adjacent to the Wasatch Range. The Wasatch Range and the Uinta-Wasatch-Cache National Forest provide numerous year-round recreation opportunities in the form of hiking, hunting, and resort areas. Pineview Reservoir is located at the top of Ogden Canyon along the Wasatch Range. The reservoir contains several Blue-Ribbon fisheries and provides abundant recreational boating activities (UDWR 2015).

The Project Area is located in previously disturbed areas within residential, urban and agricultural settings. There are no parks or designated recreation areas within the Project Area. The closest recreation areas are the Barn Golf Course, Bicentennial Park, Ben Lomond Golf Course, Orton/Green Acres Park, and Barker Park (see **Table 2-17**).

Table 2-17. Recreation Areas in the Vicinity of the Project Area

Recreation Area	Distance (miles)
Barn Golf Course	0.39
Bicentennial Park	0.49
Ben Lomond Golf Course	0.51
Orton/Green Acres Park	0.84
Barker Park	1.19

2.6.7 Visual Resources & Scenic Beauty

The Project Area is situated in an area rich with scenic beauty. Weber County contains some of Utah’s most renowned scenic features like the Great Salt Lake and the Wasatch Mountains. In addition, past and present agricultural use in the area created many open spaces throughout Weber County that are highly valued.

The Project Area is surrounded by a combination of developed residential land and open agricultural land. The rugged Wasatch Mountains are visible to the east of the Project Area.

2.6.8 Transportation & Infrastructure

Existing infrastructure in the Project Area includes linear transportation facilities, irrigation features, and adjacent residential structures. Irrigation infrastructure includes the North Ogden Canal, the existing pump station, transmission lines and the existing stormwater detention basin. was likely constructed in the 1960s.

Transportation facilities include State Route-134 (SR-134), U.S. Route-89 (US-89), 2550 North and 2700 North. Interstate-15 (I-15) is approximately 2.59 miles west of the Proposed Project. Residential development and roadway infrastructure surround the Project Area. The existing constructed pond can be accessed by via East 2550 North. The northern extents of the project can be accessed by North 300 East Street and West 2700 North.

Rocky Mountain Power and Questar Gas Company service communities in Weber County. Their transmission lines are located in and adjacent to the Project Area. There are also stormwater lines and sewer lines in and/or adjacent to the Project Area.

2.6.9 Public Health & Safety

The primary public health and safety issue in the Lower Weber Watershed is stormwater and floodwater control. The Weber County area frequently floods due to stormwater discharges exceeding floodwater capacity. The Proposed Project would provide additional floodwater management to control floodwater and help moderate property damage risks to downstream areas that receive water from Slide Canyon, Mountain Water Channel, Willow Springs, Barrett Canyon, and Pine Canyon.

2.6.10 Noise

Various factors influence the perception of noise, such as volume, frequency, atmospheric conditions, background noise, and the nature of the activity that is generating the noise. Special consideration must be given to noise sensitive areas (noise sensitive receptors) in the vicinity of the project. In these quiet areas noise impacts would be more substantial. Parks, schools, and residential areas are among the different types of noise sensitive receptors. Not including the residential areas surrounding the project, there are 11 noise sensitive receptors in the vicinity of the project (see **Table 2-18**).

Table 2-18. Proximity of Noise Sensitive Receptors to the Project Area

Noise Sensitive Receptors	Distance (miles)
Maria Montessori Academy	0.09
Barn Golf Course	0.39
Bicentennial Park	0.49
Majestic Elementary	0.55
Spanish Immersion 1-6 Program	0.55
Ben Lomond Golf Course	0.51
Orion Junior High School	0.61
North Ogden Elementary School	0.69

Noise Sensitive Receptors	Distance (miles)
Orton/Green Acres Park	0.84
Green Acres Elementary School	0.90
Barker Park	1.19

Noise is measured in decibels (dB). Sound levels can be weighted to more accurately compare sound with the typical human response. Weighted sound levels are expressed in units called A-weighted decibels (dBA). East 2550 North cuts through the center of the Project Area. This street averages approximately 2,400 vehicles per hour, at 40 miles per hour (UDOT 2016). This street is an arterial of SR-134, US-89, and I-15. Due to the proximity of the road to the Project Area, background noise level (ambient noise) is tied to traffic noise, which may equate to noise levels of approximately 71 dBA (WSDOT 2018).

3 Alternatives

3.1 Project Scoping

Scoping questions, comments and concerns were requested from the public and government agencies during the preliminary scoping period both orally at public meetings and via written submittal of comments. The primary purpose of the scoping meetings was to gather input and feedback on the Proposed Project's purpose and need statement, potential alternatives for consideration, and any environmental issues to be addressed in the Plan-EA. Seven written comments were received during the scoping period. A detailed description of the public scoping process is located in Chapter 5 and Appendix E.

3.2 Formulation Process

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

The project team, composed of environmental and engineering professionals, and Sponsor representatives, and partnering agencies, developed the alternatives. Alternatives were considered based on meeting the purpose and need, the effectiveness of proposed improvements to meet the project goals, efficiency of the improvements, and acceptability of the improvements in meeting USDA-NRCS's and the Sponsors requirements and goals. Based on this alternative screening method, two alternatives were moved forward for consideration: the No Action Alternative and the Action Alternative.

3.3 Alternatives and Options Considered but Eliminated from Detailed Study

A range of alternatives and design options were considered for study early in the project formulation phases. In accordance with NEPA (40 CFR 1502.14), some of these initial alternatives were eliminated from further analysis due to high cost, logistics related to engineering constraints and land acquisition requirements, environmental reasons including impacts to critical resources such as wetlands and waterways, or other critical factors that impacted the feasibility of the alternatives (Code 2020).

Alternatives that were investigated as part of the study but were eliminated from further consideration include:

- Construction of separate irrigation and flood control reservoirs.
- Construction of a smaller, combined irrigation and flood control reservoir.
- Construction of a larger, combined irrigation and flood control reservoir.
- Construction of a combined irrigation and flood control reservoir at alternative sites.

These alternatives were dismissed during the alternative refinement analysis process for various reasons including not fully meeting the project's purpose and need, economic reasons (high construction costs, low project benefit ratios), inability to locate other property locations that could house a reservoir, creating irrigation water delivery system inefficiencies, and high costs related to maintenance and operation activities. For example, the project team considered two separate

reservoirs for flood protection and agricultural/irrigation water. The cost and maintenance of constructing two reservoirs was significant and the proposed sites were not large enough to accommodate both reservoirs.

As noted in the list above, one of the alternatives considered but eliminated from detailed study included converting the existing stormwater detention basin into a combined irrigation and flood control reservoir. This alternative proved not to be feasible due to existing topography and size constraints. Converting the existing stormwater detention basin would therefore not meet the purpose and need as it would not be large enough to accommodate a reservoir that could simultaneously manage floodwater and increase capacity for agricultural water. Furthermore, this site may no longer be available for future use as a detention basin because the Land Use Authority has identified it as an area for future development. Therefore, use of the existing stormwater detention basin was eliminated from detailed study because of inability to meet the purpose and need of the project and incompatibility with proposed future land use changes.

3.4 Alternatives Considered for Detailed Study

There are two alternatives considered for the project that were carried forward to further study in this Plan-EA: the No Action Alternative and the Action Alternative. A description of these alternatives is presented below.

3.4.1 No Action Alternative

The No Action Alternative assumes that with no future federal investment, implementation of the North Ogden Project would not occur. Specifically, without federal investment, the North Ogden Irrigation Company would not replace its older pump house and pipeline, and the new storage reservoir would not be constructed. The recreational amenities associated with the proposed reservoir also would not be implemented or available to the North Ogden community. Other funding sources to address floodwater control and irrigation water storage would likely not be available. Limited funding sources would likely restrict projects to economically inefficient, smaller scale construction phases, with not all phases being fully implemented. For the purposes of this Plan-EA, the No Action Alternative would be the continuation of existing conditions, including the continuation of increased flooding risks during heavy rain and spring runoff events.

3.4.2 Action Alternative

The Proposed Project defines the watershed area as the Fourmile Creek subwatershed (HUC 160201020602) that contains the Proposed Project features. The total watershed area is 28,936 acres (see Watershed Map in Appendix B).

The North Ogden Project is a water management efficiency and flood protection project focused on the Fourmile Creek subwatershed within Weber County, Utah. The Proposed Project would address irrigation water delivery and floodwater concerns by constructing a new pipeline to divert flood and irrigation water from the North Ogden Canal to a new retention basin/storage reservoir. The existing pump station at the start of the project limits (near the North Ogden Canal diversion) would be abandoned. A new pump station and pipeline would be constructed at the new reservoir site to move water from the storage reservoir into the existing floodwater control system. These improvements would regulate floodwater and improve irrigation delivery efficiency. These improvements would also allow users to convert from flood irrigation to pressurized sprinkler irrigation, thereby reducing water use and the need for individual pump stations on private property. All new residential users would be required to connect to the proposed pressurized

system and agricultural users would have the option to also connect to the pressurized system. Conversions from flood irrigation to sprinklers would improve future agricultural efficiency from 60% to 80% (NRCS 2014a), however those optional improvements are not part of the Proposed Project. The North Ogden Irrigation Company maintains a water right (maximum of 45 cfs) to the North Ogden Canal. North Ogden City also maintains a water right to the North Ogden Canal (Utah Division of Water Rights 2020). The flowrate is initially estimated at 5 cfs and would increase over time to approximately 9 cfs as a result of the Action Alternative.

The Proposed Project would also provide recreational opportunities, including the development of open space, a walking trail, pavilion with restrooms, playground equipment, pickleball, and a parking area for the community (see Preferred Alternative Map in Appendix B.)

Construction activities would be anticipated to occur over a two-year period starting in 2024, pending environmental approval. Construction activities that have the potential to impact irrigation activities would occur from October 1 to April 31, outside of the typical irrigation season. Best Management Practices (BMPs), including the use of erosion controls, a Storm Water Pollution Prevention Plan (SWPPP), fugitive dust controls, and revegetation of all disturbed areas would be implemented at the site during construction activities. BMPs are discussed in depth in Section 6.4.1.

3.5 National Economic Development

The NED Alternative is the alternative or combination of alternatives that reasonably maximizes the net benefit of the project while protecting sensitive environmental resources. The net economic benefit is the benefit minus the cost of the project. The NED Alternative is defined as the federally-assisted alternative with the greatest net economic benefit (USWRC 1983).

3.6 Summary and Comparison of Alternative Plans

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

Table 3-1. Summary of Alternatives

Resource Area	No Action Alternative	Action Alternative
Soils		
Soils/Prime and Unique Farmlands	No effect.	Soils would be both temporarily and permanently disturbed due to construction activities. Construction induced erosion would be mitigated through the use of BMPs.
Geology		
Geology	No effect.	No adverse effects. Post construction localized erosion and downstream sedimentation may be reduced due to the increased storage capacity and improved floodwater regulation during high runoff events.
Water Resources		
Hydrology	Long-term adverse impact due to insufficient floodwater storage capacity	Beneficial impact due to the increased water storage capacity and minimization of flooding events. Modeling of the Proposed Project shows

Resource Area	No Action Alternative	Action Alternative
	and associated flooding risk.	that the Proposed Project improvements would reduce flooding of 45 residential structures and 3 acres of agricultural land during a 50-year storm event, reduce flooding of 2 residential structures, 1 commercial structures, and 18 acres of agricultural land during a 100-year storm event, and reduce flooding of 29 residential structures, 1 commercial structures, and 78 acres of agricultural land during a 500-year event.
Surface Water & Water Quality	Long-term negative impact to water quality due to pollutants entering the existing floodwater control system. Existing detention basin does not have an oil-water separator.	Proposed infrastructure improvements would improve water quality with the installation of an oil-water separator and rotating screen as part of the new floodwater control and irrigation system improvements.
Water Rights	No effect.	No effect.
Groundwater & Water Quality	No effect.	No effect.
Clean Water Act / Waters of the U.S. including Wetlands	No effect.	No effect.
Floodplain Management	No effect.	Beneficial impact due to the increased water storage capacity and minimization of flooding events.
Climate Change	No effect.	No long term impacts. Construction-related emissions of GHG would be temporary and would not significantly contribute to GHG emissions on a local, regional, or global scale. Construction related emissions would not be anticipated to significantly increase impacts from climate change to the Project Area. Cumulative impacts are not anticipated.
Air		
Air Quality	No effect.	Temporary construction-related air emissions.
Plants		
Dominant Vegetation Communities	No effect.	Vegetation would be cleared, resulting in both temporary and permanent impacts. BMPs would be implemented during construction to reseed the cleared areas and avoid impacts to vegetation, wherever possible.
Special Status Plant Species	No effect.	No effect.
Noxious Weeds & Invasive Plants	No effect.	Construction activities could put the Project Area at a higher risk of invasive weeds. BMPs would be implemented to minimize the spread of invasive plants during construction.

Resource Area	No Action Alternative	Action Alternative
Riparian Areas	No effect.	The Action Alternative would have a direct negative impact to the existing manmade riparian area located around the existing constructed pond. The Action Alternative would be anticipated to have no impact other natural waterways or other riparian areas in the subwatershed.
Animals		
Fish & Wildlife	No effect.	Wildlife would be temporarily disturbed during construction. Implementation of the Action Alternative would temporarily disturb open water habitat used by waterfowl. Fish would not be affected by the Action Alternative.
Special Status Animal Species	No effect.	No effect.
Invasive Animal Species	No effect.	No effect.
Migratory Birds/Bald and Golden Eagles	No effect.	No effect. If feasible, construction would be timed to avoid the active breeding and nesting seasons for migratory birds. If scheduling is not feasible, active nest surveys would be performed before construction occurs.
Human Environment		
Socioeconomics	No effect.	The Action Alternative would result in $136,000 in average annual damage reduction benefits and would provide $175,200 in a net annual economic benefit.
Environmental Justice & Civil Rights	No effect.	No effect.
Cultural & Historic Resources	No effect.	No impact. If construction activities uncover any materials of cultural or historical significance (i.e., bone fragments, pottery, stone tools, etc.), construction would halt and coordination with the USDA-NRCS Archaeologist would occur.
Hazardous Materials	No effect.	No long-term effect. Temporary construction impacts would be mitigated through the use of an approved Spill Prevention Control and Countermeasures (SPCC) plan.
Public Health & Safety	Less floodwater detention and increased risk of flooding and associated flood damages.	Flooding risks and flood damages would be reduced by providing additional floodwater detention capacity.
Recreation	No effect.	The Action Alternative would have a net benefit impact by increasing recreation opportunities in the Project Area. The Action Alternative would include park-like facilities that would promote recreational use.

Resource Area	No Action Alternative	Action Alternative
Land Use	No effect.	No property acquisition or changes in land use would be required for the Proposed Project.
Visual Resources & Scenic Beauty	No effect.	Temporary impacts to visual quality during construction.
Transportation & Infrastructure	Long-term negative impact to irrigation and floodwater infrastructure.	Net benefit effect on infrastructure from the irrigation and floodwater infrastructure improvements. Temporary impacts to transportation facilities from increased construction traffic and partial lane closures or reductions in travel lane widths.
Noise	No effect.	Temporary increases in noise would be associated with construction. Noise levels would return to background sound levels post-construction.
National Economic Development / Costs & Benefits		
Construction Cost	$0	$12,933,162
Project Environmental, Engineering and Administrative Costs	$0	$2,291,246
Total Project Cost (Installation Cost)	$0	$15,224,408
Cost Sharing (USDA-NRCS)	$0	$11,972,423
Cost Sharing (Sponsors)	$0	$3,251,985
Annual Installation Cost	$0	$430,600
O&M Cost	$0	$143,300
Annual Cost	$0	$573,900
Annual Benefit	$0	$749,100
Annual Net Economic Benefit	$0	$175,200
Benefit/Cost Ratio	0	1.31

4 Environmental Consequences

The USDA-NRCS has the responsibility under NEPA to identify and address effects on the human environment that may occur as a result of the alternatives analyzed in this Plan-EA. The following sections describe the potential effects of the alternatives within each resource category.

The No Action Alternative discusses the potential effects if federal monies were not used for the Proposed Project. The Action Alternative discusses the potential effects if federal monies were used to implement the proposed actions. The following types of impacts were used to compare the impact of the No Action Alternative and the Action Alternative:

- **Direct Effect:** Impacts resulting from implementation of a proposed action and occurring at the same time frame and location.
    - Permanent – Areas disturbed by excavation, vegetation removal, etc.
    - Temporary – Areas disturbed by construction activities and staging.
- **Indirect Effect:** Reasonably foreseeable impacts that are related to implementation of a proposed action but separated in time or distance.
- **Cumulative Effect:** Impact caused by a proposed action when considered with other past, present, and reasonably foreseeable future actions (regardless of the agency or person undertaking such action).

4.1 Soils & Geology

4.1.1 Soils/Prime and Unique Farmlands

4.1.1.1 No Action Alternative

Under the No Action Alternative, there would be no direct or indirect impacts to prime and unique farmlands or geological characteristics because no actions would be taken. Therefore, the No Action Alternative would have no effect on soils or geology in the Fourmile Creek Sub-Watershed. Cumulative impacts are not anticipated.

4.1.1.2 Action Alternative

The majority of mapped soils in the Project Area are considered farmlands of statewide importance (65.8%), the remainder are considered “not prime farmland.” The Project Area is mainly dedicated to urban uses; a portion of the Project Area is an open equine grazing area. There is no active irrigated farming activity in the Project Area. This property would be acquired by North Ogden City prior to project execution. No adverse impact to protected farmland is anticipated from the Action Alternative.

Implementation of the Action Alternative would result in both permanent and temporary construction-related impacts to soils in the Project Area. Soils would be removed from the Project Area to construct the reservoir. Temporary soil disturbance would be associated with installing the pipelines. Segments of the pipeline would be installed in pre-disturbed soils associated with the existing roadway ROW. The return line and most of the pipeline exist in soils that have been previously disturbed and dedicated to urban use.

The potential for erosion is low for the Proposed Project since no work would occur on steep slopes that are prone to severe erosion. Under the Action Alterative, construction induced erosion would be mitigated through the use of BMPs. Cumulative impacts are not anticipated.

4.1.2 Geology

4.1.2.1 No Action Alternative

The No Action Alternative would have no direct or indirect impact to the Project Area as the geology of the area would remain unaffected. Cumulative impacts are not anticipated.

4.1.2.2 Action Alternative

Construction activities would temporarily and permanently disturb surficial soils, as described in Section 4.1.1, but there would be no effect to the underlying geology. Upon completion of the Action Alternative, localized erosion and downstream sedimentation may be reduced due to the increased storage capacity and improved floodwater management during high runoff events. Additionally, no impacts to landslides and seismology are anticipated under the Action Alternative. Therefore, the Action Alternative is anticipated to have no impact to the geology of the Project Area, and cumulative impacts are not anticipated.

4.2 Water Resources

Activities related to water resources are regulated by the EPA, the USACE, and the UDEQ. Appropriate permits would need to be obtained for any activities regulated by the CWA and may include a National Pollutant Discharge Elimination System (NPDES) permit (for construction over 1 acres), as determined by the Utah Pollutant Discharge Elimination System (UPDES). At this time, no specific area management plans have been identified with which the Action Alternative would need to comply.

4.2.1 Surface Water & Water Quality

4.2.1.1 No Action Alternative

The No Action Alternative may have a long-term negative effect to water quality due to the potential for increased floodwater impacts in the Project Area. Surface water quality may experience negative long-term impacts due to pollutants entering the water system, which may result in net negative cumulative impacts to both water quality and biological resources.

4.2.1.2 Action Alternative

The Action Alternative would divert water from the North Ogden Canal to the reservoir. The Action Alternative would be anticipated to improve surface water quality in the Project Area due to the installation of the new floodwater system measures. Cumulative impacts are not anticipated.

4.2.2 Hydrology

4.2.2.1 No Action Alternative

The No Action Alternative would have a negative impact on hydrology, as the current flood storage capacity is insufficient. The lack of water storage capacity influences the frequency of flooding and flood damages incurred by the community from the flooding of homes, roads and businesses. Increased flooding is a public safety concern. Net negative cumulative impacts from increased flood impacts are anticipated due to a lack of adequate infrastructure.

4.2.2.2 Action Alternative

The Action Alternative would have a positive impact on hydrology in the Project Area. The Action Alternative would increase flood storage capacity and minimize the flood related damages from the flooding of homes, roads, and businesses, to the surrounding communities and the overall watershed. Modeling of the Action Alternative shows that the Proposed Project improvements would reduce flooding of 45 residential structures and 3 acres of agricultural land during a 50-year storm event, reduce flooding of 2 residential structures, 1 commercial structures, and 18 acres of agricultural land during a 100-year storm event, and reduce flooding of 29 residential structures, 1 commercial structures, and 78 acres of agricultural land during a 500-year event.

Net positive cumulative impacts would be anticipated due to improved management of floodwater during high-flow events.

4.2.3 Water Rights

4.2.3.1 No Action Alternative

The No Action Alternative would have no effect on water rights in the Project Area. Cumulative impacts are not anticipated.

4.2.3.2 Action Alternative

The Action Alternative would divert irrigation water from the North Ogden Canal into a new lateral pipeline at an existing point of diversion. The water would be piped approximately 3,000 feet to the proposed, new irrigation reservoir. The North Ogden Irrigation Company maintains a water right (maximum of 45 cfs) to the North Ogden Canal. North Ogden City also maintains a water right to the North Ogden Canal (Utah Division of Water Rights 2020). No increases or changes to the amount of water diverted would take place under the Action Alternative. Water shares and rights are presently secured by North Ogden City for the irrigation system; therefore, the Action Alternative would be anticipated to have no impact on water rights. Cumulative impacts are not anticipated.

4.2.4 Groundwater & Water Quality

4.2.4.1 No Action Alternative

The No Action Alternative would have no direct or indirect impact to area groundwater, as existing conditions would continue and thus there would be no change to groundwater recharge or access. Cumulative impacts are not anticipated.

4.2.4.2 Action Alternative

The Action Alternative would have no direct or indirect impact to area groundwater, as it would continue to allow for recharge. Irrigation water would be temporarily stored in the proposed reservoir before moving through the WBECD irrigation system facilities downstream of the reservoir. Additionally, the proposed reservoir would retain floodwater to mitigate effects from flood events. The floodwater would eventually be released into an existing floodwater control pipe and the water would continue to recharge the area through controlled distribution. Cumulative impacts are not anticipated.

4.2.5 Waters of the U.S. including Wetlands

4.2.5.1 No Action Alternative

The No Action Alternative would have no effect on Waters of the U.S. or wetlands in the Project Area. Cumulative impacts are not anticipated.

4.2.5.2 Action Alternative

A WRA was conducted on May 24, 2018, by J-U-B for the Project Area. The evaluation concluded that there are no Waters of the U.S. or jurisdictional wetlands within the Project Area. The WRA indicates that the constructed pond and associated wetlands likely would not be considered preamble waters because the feature is artificial, was constructed in an upland position, and is not connected to any known jurisdictional water feature (JUB 2018). The WRA ultimately concluded that no Waters of the U.S. or wetlands would be impacted by the Proposed Project actions (JUB 2018). Therefore, the Action Alternative is anticipated to have no impact on Waters of the U.S. or wetlands. Cumulative impacts are not anticipated.

4.2.6 Floodplain Management

4.2.6.1 No Action Alternative

The Project Area is located in an area of minimal flood hazard, as identified on the FEMA FIRMette. The classification of the Project Area, coupled with the lack of construction, would result in the No Action Alternative having no effect on floodplains in the Project Area. Cumulative impacts are not anticipated.

4.2.6.2 Action Alternative

The FEMA FIRMette identified the Project Area as being an area of minimal flood hazard. No work would occur in the 100-year floodplain, or other flood hazard areas. Due to the expanded water storage capacity and minimization of flood events, it is anticipated that the Action Alternative would beneficially impact floodplain management in the Project Area. Cumulative impacts are not anticipated. Of note, future development within the breach inundation area of the Action Alternative would be required to have the lowest floor (including basement), elevated to or above the base flood elevation.

4.3 Air Quality

4.3.1 No Action Alternative

The No Action Alternative would not produce any air emissions, thus the No Action Alternative would have no effect on air quality in the Project Area. Cumulative impacts are not anticipated.

4.3.2 Action Alternative

The Project Area is not located in a non-attainment or maintenance area; therefore, the General Conformity Rule does not apply to this project. Implementation of the Action Alternative requires the use of emission producing construction equipment and vehicles. These minor, construction-related air emissions would be temporary and would not alter the NAAQS status of communities in the Fourmile Creek subwatershed. The Action Alternative would have no significant effect on air quality in the Project Area. Cumulative impacts are not anticipated.

4.4 Plants

4.4.1 Dominant Vegetative Communities

4.4.1.1 No Action Alternative

The No Action Alternative would not involve construction or vegetation clearing, therefore, the No Action Alternative would have no direct or indirect effect on vegetation in the Project Area. Cumulative impacts are not anticipated.

4.4.1.2 Action Alternative

If implemented, the Action Alternative would result in temporary direct impacts to vegetation. Approximately seven acres of vegetation would be cleared during construction. Permanent impacts to vegetation would occur in the area of the proposed reservoir and recreation facilities. These impacts would be limited and would not impact high quality or rare vegetation. BMPs would be implemented during construction to reseed the cleared areas and avoid impacts to vegetation, wherever possible. Cumulative impacts are not anticipated.

4.4.2 Special Status Plant Species

4.4.2.1 No Action Alternative

No Utah state-listed species or ESA-listed species are known to occur within the Project Area. The No Action Alternative would have no effect on endangered and threatened plant species, or Utah state-listed species. Cumulative effects are not anticipated.

4.4.2.2 Action Alternative

There are no Utah state-listed species or ESA-listed species with the potential to occur in the Project Area; therefore, the Action Alternative would be anticipated to have no effect on endangered and threatened plant species, or Utah state-listed species. Construction would not occur during breeding/nesting periods. Cumulative effects are not anticipated.

4.4.3 Noxious Weeds & Invasive Plants

4.4.3.1 No Action Alternative

The No Action Alternative would not be anticipated to have an effect on noxious weed or invasive species control or invasion. Cumulative impacts are not anticipated.

4.4.3.2 Action Alternative

BMPs would be implemented during construction to prevent noxious weed and invasive species recruitment. During construction activities, area roads would be utilized by trucks and equipment to access the site; however, implementation of construction BMPs would minimize the potential for transport of invasive plants into the area. During construction and until vegetation is fully established, BMPs would be maintained on a regular basis to prevent the establishment of noxious weeds and invasive plant species. Non-desirable plant species would be controlled by cleaning equipment prior to delivery to the project site, eradicating them before the start and during construction as identified, and routine monitoring after construction completion.

Indirectly, the Action Alternative would have no effect on noxious weed or invasive species control and invasion in the Project Area because the WBECD and North Ogden City would be responsible for maintaining the site and controlling invasive species. Therefore, it is anticipated that the Action Alternative would have no increase the risk of invasive plant recruitment but may have a positive impact on invasive species control. Cumulative impacts are not anticipated.

4.4.4 Riparian Areas

4.4.4.1 No Action Alternative

The No Action Alternative would not impact the riparian communities in the Project Area. Cumulative impacts are not anticipated.

4.4.4.2 Action Alternative

The Action Alternative is anticipated to directly impact the riparian community that surrounds the existing constructed pond. The constructed pond is not connected to other natural waterways or riparian areas in the Project Area and is a humanmade feature. The Action Alternative would remove the existing constructed pond and associated riparian vegetation, which is approximately 0.55 acres in area, including open water and submerged vegetation. The riparian vegetation is established along the interior edges of the constructed pond and is largely submerged. The constructed pond exists in an upland setting, and does not have downstream connectivity to a jurisdictional Waters of the U.S. The reservoir proposed under the Action Alternative would be constructed in the location of the existing constructed pond. The proposed reservoir would not offer similar riparian habitat because it would be lined and actively maintained to prevent sedimentation and vegetation establishment. Therefore, while it is anticipated that the Action Alternative would have a direct negative impact to the existing constructed pond and surrounding riparian vegetation, the Action Alternative is not anticipated to impact other natural waterways or riparian areas in the subwatershed. Cumulative impacts from the removal of the existing constructed pond are not anticipated because the feature does not have connectivity to other natural features that depend on the resources present in the constructed pond, and because the constructed pond is privately owned, the loss of it and its associated riparian vegetation would not have community-wide cumulative impacts. At this time, there are no known projects in the recent past, present, or foreseeable future that are anticipated to result in the loss of riparian vegetation in the vicinity of the Action Alternative.

4.5 Animals

4.5.1 Habitat

4.5.1.1 No Action Alternative

The No Action Alternative would have no effect on fish or wildlife, or their associated habitats within the Project Area. Cumulative impacts are not anticipated.

4.5.1.2 Action Alternative

Due to the Project Area being previously disturbed and located within an urban setting, wildlife habitat is fragmented and of marginal to very low quality. Wildlife habitat within the Project Area would largely be mature trees and the existing constructed pond and associated riparian vegetation. The Action Alternative would be anticipated to have temporary, construction-related effects to wildlife which utilize the open water habitat. For example, during construction the Project Area would experience increased construction noise and disruption on the constructed pond's habitat during its removal and subsequent construction of the multi- purpose reservoir. However, these impacts would cease after construction completion. The Action Alternative is not anticipated to impact wildlife habitat in the larger Fourmile Creek subwatershed as there is other available open water habitat in the North Ogden area. Overall, the Action Alternative is anticipated to have no long-term impacts to wildlife habitat within the subwatershed. Cumulative impacts are not anticipated.

4.5.2 Special Status Animal Species

4.5.2.1 No Action Alternative

The No Action Alternative would not impact federally-listed or State-listed animal species with the potential to occur within the Project Area. There would also be no effect on designated critical habitat. Cumulative impacts are not anticipated.

4.5.2.2 Action Alternative

The BE prepared by J-U-B and approved by USDA-NRCS concluded that the Action Alternative would have no effect on any ESA-listed species, or Utah state-listed species with the potential to exist within the Project Area (JUB 2020). The Action Alternative is anticipated to have no impact to these species because there is no suitable habitat for the species within the Project Area, and construction would not occur during breeding, nesting, or spawning periods. Additionally, there is no designated critical habitat in or near the Project Area. Therefore, the Action Alternative is anticipated to have no impact on critical habitat or other areas within the subwatershed valuable to the protected species. Cumulative impacts are not anticipated.

4.5.3 Invasive Animal Species

4.5.3.1 No Action Alternative

No invasive animal species were noted during site investigations; however, several invasive animal species are present in the County. The No Action Alternative would have no effect on their ability to use the area and would not prevent their establishment within the Project Area or larger subwatershed. Cumulative impacts are not anticipated.

4.5.3.2 Action Alternative

No invasive animal species were noted during site investigations; however, several invasive animal species are known to occur in the County. If invasive animal species are present in the Project Area, implementation of the Action Alternative would not affect their ability to use the area, and it is likely the species would continue to use the area. Indirect effects to invasive species would not be anticipated. Cumulative impacts are not anticipated.

4.5.4 Migratory Birds/Bald and Golden Eagles

4.5.4.1 No Action Alternative

The No Action Alternative would have no effect on migratory birds, or bald and golden eagles since no construction activities would occur, there are no recent records of occurrence within the Project Area, and no nests were identified during the field investigations. Cumulative impacts are not anticipated.

4.5.4.2 Action Alternative

Migratory birds and bald and golden eagle individuals or nests were not observed during the field visit. Ideally, construction would be scheduled to avoid active breeding and nesting seasons for migratory birds and bald and golden eagles. If construction timing cannot be arranged accordingly, then the Project Area would be surveyed for active nests prior to construction. The USDA-NRCS and USFWS would be contacted immediately if a nest were identified. Given the lack of observed individuals and suitable habitat, and the completion of a nest survey prior to construction, the Action Alternative is anticipated to have no effect on birds protected by the MBTA and BGEPA. Cumulative impacts are not anticipated.

4.6 Human Environment

4.6.1 Socioeconomics

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

4.6.1.1 No Action Alternative

Under the No Action Alternative, the Project Area would continue to experience recurrent flooding and associated damage, there would be no annual damage reduction benefits to property. Cumulative impacts are not anticipated.

4.6.1.2 Action Alternative

As determined by the economic analysis prepared for the Proposed Project, the Action Alternative is anticipated to result in an estimated $136,000 in average annual damage reduction benefits. Compared to the No Action Alternative, the Action Alternative is anticipated to offer $175,200 in net damage reduction. The Proposed Project improvements would reduce flooding of 45 residential structures and 3 acres of agricultural land during a 50-year storm event, reduce flooding of 2 residential structures, 1 commercial structures, and 18 acres of agricultural land during a 100-year storm event, and reduce flooding of 29 residential structures, 1 commercial structures, and 78 acres of agricultural land during a 500-year event. A breach of the proposed storage reservoir would result in 219 residential structures that would experience flooding with a population at risk (PAR) of 27 with a fatality rate of 0 people. Cumulative impacts are not anticipated.

4.6.2 Environmental Justice & Civil Rights

4.6.2.1 No Action Alternative

The No Action Alternative would have no effect on environmental justice and civil rights in the Project Area. Cumulative impacts are not anticipated to result from the No Action Alternative.

4.6.2.2 Action Alternative

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

The demographic analysis demonstrates that although there are individuals present in the area that qualify for EJ protections, there are no EJ communities due to the lack of significant differences for the majority of the metrics analyzed. Construction activities may temporarily impact individuals living in the Project Area due to construction traffic and temporary area closures. Impacts would be minor and localized to areas adjacent to construction activities. No closure of business or loss of access to businesses or residences, and no residential relocations are necessary to implement the Action Alternative. The Proposed Project would benefit all individuals within and surrounding the Project Area by reducing flood risks to private structures and the community, thereby having a net positive impact on the community surrounding the project, including minority or disadvantaged individuals.

Public participation was an integral aspect of the preparation of this EA. A discussion of the public involvement process is described in Chapter 5 of this EA. As part of the public participation process, the plan seeks to meaningfully engage minority, low-income, and traditionally under-represented populations during the NEPA process. Documents, notices, and meetings are concise, understandable, and readily accessible to the public; notices of meetings are provided in non-English languages for targeted public audiences, affected landowners, and stakeholders when appropriate; all public events will be scheduled at convenient, accessible locations.

No long-term adverse effects on low-income or minority individuals are anticipated because no long-term adverse environmental or human health effects are anticipated to occur as a result of implementing the Action Alternative. The Action Alternative meets the provisions of Executive Order 12898, as it is supported by Title VI of the Civil Rights Act. Given that the purpose of the Action Alternative is to improve management of irrigation water allocated by the WBECD and provide flood damage risk reduction for people and structures in North Ogden City, the Action Alternative is not anticipated to result in negative, disproportionate impact to protected populations. Overall, the Action Alternative is anticipated to provide a net benefit to residents without preference for race or income. Cumulative impacts are not anticipated.

4.6.3 Cultural & Historic Resources

4.6.3.1 No Action Alternative

The No Action Alternative would have no effect on cultural and historic resources in the Project Area. Cumulative impacts are not anticipated.

4.6.3.2 Action Alternative

Scoping letters for the Proposed Project were sent to the Confederated Tribes of the Goshute Reservation, the Northwestern Band of the Shoshone Nation, and the Ute Tribe of the Uintah and Ouray Reservation. No comments were received during the consultation process. A cultural resources survey was conducted in November 2018 and submitted to the Utah SHPO for compliance with Section 106 requirements. The survey concluded that Proposed Project would have no effect on cultural and historic resources in the Project Area. Concurrence from SHPO was received on January 10, 2019, wherein it was determined that the Action Alternative would have no effect on cultural and historic resources in the Project Area (see Appendix A). Cumulative impacts are not anticipated.

If construction activities uncover any materials of cultural or historical significance (i.e., bone fragments, pottery, stone tools, etc.), construction would halt and coordination with the USDA-NRCS Archaeologist would occur.

4.6.4 Hazardous Materials

4.6.4.1 No Action Alternative

The No Action Alternative would have no direct or indirect impacts on hazardous or solid waste in the Project Area. Cumulative impacts are not anticipated.

4.6.4.2 Action Alternative

The Action Alternative would generate a small amount of solid waste during construction. The solid waste generated by the Action Alternative would not exceed the capacity of the 17 solid waste facilities within the vicinity of the Project Area. These impacts would be minor and temporary in nature.

There are seven underground storage tanks, and one hazardous waste/used oil facility within a 0.5-mile radius of the Project Area. None of the identified facilities are situated within or directly adjacent to the Project Area. No hazardous materials would be created as a result of the Action Alternative. Contractors must comply with pertinent pollution and contamination laws and regulations (federal, state and local) to prevent hazardous materials from entering the soil, water, or air. To prevent and minimize the threat associated with fueling construction equipment, the contractor would follow an approved SPCC plan identifying all fueling and equipment storage locations. Overall, the Action Alternative is anticipated to have no impact on hazardous and solid waste in the Project Area. Cumulative impacts are not anticipated.

4.6.5 Public Health & Safety

4.6.5.1 No Action Alternative

The communities in and downstream of the Project Area currently experience frequent flooding and incur regular flood damages. The storage capacity of the existing system is insufficient and would continue to be insufficient with the No Action Alternative. Under the No Action Alternative, recurrent flooding would continue to threaten public health and safety in the Project Area. Cumulative impacts are not anticipated.

4.6.5.2 Action Alternative

The primary reason for the implementation of the Action Alternative relates to the need to expand the flood storage capacity in the area. Communities within the subwatershed experience recurrent flood damages from high-runoff events. The Action Alternative would increase the floodwater storage capacity of the area, expand floodwater infrastructure, and reduce the risk of continued flood damages. A flood inundation analysis was conducted to analyze potential impacts to downstream structures and people if the dam were to breach. The PAR would be 27 people with a fatality rate of 0 people. The structure has been classified by USDA-NRCS as a low hazard dam. The reservoir would be designed to meet the requirements of the USDA-NRCS and Utah Division of Dam Safety. Given the purpose of the Proposed Project and the low hazard ranking, the Action Alternative is anticipated to have a positive effect on public health and safety in the Project Area. Cumulative impacts are not anticipated.

4.6.6 Recreation

4.6.6.1 No Action Alternative

There are numerous recreation opportunities in the Fourmile Creek subwatershed. The closest recreation areas are the Barn Golf Course, Bicentennial Park, Ben Lomond Golf Course, Orton/Green Acres Park, and Barker Park. The No Action Alternative would have no impact on these recreation resources, or any other similar resources. Cumulative impacts are not anticipated.

4.6.6.2 Action Alternative

No designated parks or recreation areas exist within the Project Area, and none of the aforementioned recreation resources would be affected by the Action Alternative. The Action Alternative would create an additional recreation resource for public use, such as a walking trail, pavilion, restrooms, playgrounds, pickleball count, and parking facilities surrounding the multi-purpose reservoir that could be utilized by the general public. This would provide a net positive impact to recreation resources. Therefore, implementation of the Action Alternative is anticipated to have a net benefit impact on recreation resources in the Project Area. Cumulative impacts are not anticipated.

4.6.7 Land Use

4.6.7.1 No Action Alternative

The area contains previously disturbed areas within residential, urban and agricultural settings. If the No Action Alternative were pursued, North Ogden City would not construct the multi- purpose reservoir, and land uses would not change. Cumulative impacts are not anticipated.

4.6.7.2 Action Alternative

The Project Area is zoned for single-family residential and agricultural development. The reservoir and other project components would be considered a permitted use in these areas. In order to ensure that the hazard class within the project area does not increase during the evaluated project life (per NWPM 504.1.C.), North Ogden City, per North Ogden City Code 10-4-7 Flood Hazard Reduction, would require that "new construction shall have the lowest floor (including basement), elevated to or above the base flood elevation." (North Ogden City 2005). North Ogden City owns the property proposed for the new reservoir. Therefore, no land acquisition would be required for

the implementation of the Proposed Project. The property is currently being used as an equine grazing area. Implementation of the Action Alternative is anticipated to have minimal impact on land use in the Project Area. Cumulative impacts are not anticipated.

4.6.8 Visual Resources & Scenic Beauty

4.6.8.1 No Action Alternative

North Ogden City and the Fourmile Creek subwatershed are known for their scenic beauty and aesthetic resources. The area contains a mixture of residential development and open agricultural landscapes. The Wasatch Mountains are visible to the east of North Ogden City. The No Action Alternative would have no effect on scenic beauty and visual/aesthetic resources. Cumulative impacts are not anticipated.

4.6.8.2 Action Alternative

Under the Action Alternative, the visual quality of the Project Area would be temporarily impacted due to the presence of construction activities, equipment, and staging areas. Following the completion of the Proposed Project, the visual quality of the Project Area would be restored by revegetation of disturbed areas. A variety of park-like features and amenities may be erected around the reservoir to promote public use and improve the visual quality of the reservoir. The Action Alternative would not impact the scenic beauty of the Project Area, and no permanent, negative impacts to visual quality would result from implementation of the Action Alternative. Cumulative impacts are not anticipated.

4.6.9 Transportation & Infrastructure

4.6.9.1 No Action Alternative

Existing infrastructure in the North Ogden City area includes the stormwater detention basin, North Ogden Canal, existing constructed pond, and roadway infrastructure. The No Action Alternative would have no permanent impact on transportation. Under the No Action Alternative, the North Ogden Canal would not be altered, there would be no infrastructure improvements, and the current capacity issues would continue. Therefore, the No Action Alternative would be anticipated to have a negative impact from flooding in the area. Cumulative impacts are not anticipated.

4.6.9.2 Action Alternative

Excavation within the roadway prism would occur in order to install the new piping under North 300 East, East 2600 North, West 2550 North, and the gravel access road off of West 2550 North. During implementation of the Action Alternative, increases in construction related traffic along the access roads would be expected. These impacts would be short-term and traffic flow would return to normal following construction completion. No roadway closures are anticipated during the implementation of the Action Alternative. No permanent impacts to transportation facilities would occur.

Under the Action Alternative, a pipeline would be placed around the outside edge of the existing stormwater detention basin, which would connect from the North Ogden Canal pump station to the proposed new reservoir. The North Ogden Canal would not be modified. The improvements for floodwater management and the irrigation system would have a positive impact on managing floodwater in the Project Area. Cumulative impacts are not anticipated.

4.6.10 Noise

4.6.10.1 No Action Alternative

The Project Area is surrounded by residential development. There are 11 noise sensitive receptors in the general vicinity of the Project Area, not including residential development. Some of these include schools and recreation centers. There are several busy streets in the Project Area including SR-134, US-89, I-15, and East 2550 North, which cuts through the center of the Project Area. Background noise levels associated with existing traffic noise are estimated to peak at approximately 71 dBA (WSDOT 2018). The No Action Alternative would have no effect on noise levels in the Project Area. Cumulative impacts are not anticipated.

4.6.10.2 Action Alternative

Temporary increases in noise related to the use of construction equipment and vehicles, would result from implementation of the Action Alternative.

Temporary construction related noise would likely be the farthest-reaching noise impact for the Proposed Project. Anticipated construction equipment includes excavators, backhoes, graders, compactors, rollers, and dump trucks for hauling materials. The typical noise level for construction equipment used at the Proposed Project is described in **Table 4-1** below. Due to the small scope of the Proposed Project, it is likely only one piece of equipment would be used at a time. The use of a grader would peak noise levels at 89 dBA.

Table 4-1. Anticipated construction equipment and average maximum noise levels at 50 feet from common construction

Equipment	Noise (dBA)
Grader	89
Compactor	83
Excavator	81
Roller	80
Backhoe	78
Dump truck	76

(WSDOT 2018)

Given the ambient noise for the Proposed Project, **Table 4-2** illustrates that temporary construction noise levels would surpass ambient noise at a distance of 50 feet from the Proposed Project extent.

Table 4-2. Noise attenuation table based on a comparison of background and construction noise levels

Distance (Feet)	Construction Noise (-6.0 dBA)*	Background Sound – Traffic Noise (-3.0 dBA)
50	89	71
100	83	68
200	77	65
400	71	62
800	65	59
1,600	59	56

Distance (Feet)	Construction Noise (-6.0 dBA)*	Background Sound – Traffic Noise (-3.0 dBA)
3,200	51	53

**The site is comprised of "hard site" conditions.*

Table 4-2 shows that temporary construction noise levels should reach background noise levels at a distance of 3,200 feet (approximately 0.61 miles) from the Proposed Project limits of disturbance. Temporary construction noise would attenuate before reaching four of the identified noise sensitive receptors.

Noise mitigation measures such as established daytime working hours and the use of properly functioning equipment mufflers would be implemented during construction to minimize temporary noise impacts. After project completion, noise levels would return to existing levels. Overall, no permanent noise impacts are expected to result from the Action Alternative. Cumulative impacts are not anticipated.

4.7 Risk & Uncertainty

Estimating project costs and benefits involves a certain degree of risk and uncertainty. Land use could change from existing conditions, as North Ogden's population grows. During the Proposed Action planning process, decisions were made with information that is uncertain including errors in measurements and climatic changes that could alter rainfall storm events. Assumptions made during the planning process are based on the best available science, technology and information. Extended delays between the planning process and construction can increase the degree of risk and uncertainty. Estimated project costs are based on computed work quantities multiplied by appropriate unit costs for specific types of work. Unit costs are based on current market prices from similar projects. Costs can be influenced by economic factors that cannot be predicted between the planning process and construction phases that could increase the actual cost and decrease the availability of materials.

Economic benefits from projects are based on material values of property, infrastructure, and agricultural land. Such property is expected to become more valuable in the future, but it can be difficult to predict future economic conditions. There is also uncertainty in estimating the social and environmental costs as interested party values, judgements, and opinions may shift over time.

4.8 Irreversible & Irretrievable Resource Commitments

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

4.8.1 No Action Alternative

Implementation of the No Action Alternative would involve a commitment of a range of natural, physical, human, and fiscal resources to continue repairs to existing infrastructure or to address

damages from additional flood events. Over time, these resources could resemble the construction commitments for the Action Alternative.

4.8.2 Action Alternative

Implementation the Action Alternative would involve a commitment of a range of natural, physical, human, and fiscal resources. Consumption of fossil fuels, labor, and construction materials (e.g., cement, aggregate, and bituminous material) would be expended. Additionally, labor and natural resources would be used in the fabrication and preparation of construction materials. These efforts and materials are generally not retrievable. They are not, however, in short supply and their use for the Action Alternative would not have an adverse effect upon continued availability of these resources. Any construction would also require a substantial one-time expenditure of federal and cost-shared funds that would not be retrievable.

The commitment of these resources would be based on the premise that residents in the immediate area, the state, and the region would benefit by the improved floodwater management and irrigation storage it provides. These benefits would be anticipated generally to outweigh the permanent commitment of resources.

5 Consultation, Coordination, & Public Participation

This chapter describes the public and agency coordination efforts for the North Ogden Project. The intent of the proposed action is to implement a solution that would provide storage for irrigation waters, flood protection and recreational opportunities for the Project Area.

5.1 Consultation

5.1.1 Utah SHPO

A cultural resources report was submitted to the Utah SHPO to comply with Section 106 of the NHPA, and for concurrence with a “no historic properties affected” determination. SHPO concurrence was received on January 10, 2019 (see Appendix A).

5.1.2 USACE

The USACE has jurisdiction over work in Waters of the U.S. under Section 404 of the CWA. Coordination with the USACE regarding potential impacts to Waters of the U.S. identified that there would be no impacts to jurisdictional water resources from the implementation of the Proposed Project.

5.1.3 Tribal

In accordance with Executive Order 13175, USDA-NRCS is responsible for assessing the impacts of activities, considering tribal interests, and assuring that tribal interests are considered in conjunction with federal activities and undertakings. USDA-NRCS recognizes that tribal governments are sovereign nations located within the United States. USDA-NRCS has a responsibility to help fulfill the U.S. government’s responsibilities toward tribes when considering actions that when considering actions that may affect tribal rights, resources, and assets. USDA-NRCS sent scoping letters to the following tribes: Confederated Tribes of the Goshute Reservation; Ute Tribe of the Uintah and Ouray Reservation; and Northwestern Band of the Shoshone Nation.

The NRCS Archaeologist conducted the tribal consultation and NRCS submitted a letter on January 8, 2019 to the Shoshone-Bannock Tribes of the Fort Hall Reservation, Northwest Band of the Shoshone Nation, Confederated Tribes of the Goshute Reservation, Ute Indian Tribe of the Uintah & Ouray Reservation, Eastern Shoshone Tribe of the Wind River Reservation, and the Skull Valley Band of Goshute Indians for concurrence and compliance with Section 106 requirements. The tribes have not responded to the request for consultation. Tribal consultation letters are included in Appendix A. **Table 5-1** shows consultation with each federally recognized tribe.

Table 5-1. NRCS Record of Tribal Consultation

NRCS Record of Tribal Consultation											
Project/Reason for Initiating Consultation: North Ogden Watershed Plan-EA (NEPA)											
Program: NRCS Watershed and Flood Prevention Operations Program											
Tribe Information			**Cons Initiated[1]**	**Cultural Resource Report Consultation Package[2]**			**Consultation Follow Up[2]**				**Tribe Cons Completed (Date)**
Federally Recognized Tribe	**Contact Name**	**Address**		**NRCS Mailed to Tribe**	**Received by Tribe[3]**	**Tribe Response**	**Follow Up #1 Type (Date)**	**Response #1 Type (Date): Response**	**Follow Up #2 Type (Date)**	**Response #2 Type (Date): Response**	
Shoshone-Bannock Tribes of the Fort Hall Reservation	Nathan Small (Former Chairman)	P.O. Box 306 Fort Hall, Idaho 83203	-	1/8/2019		-	-	-	-	-	Yes (1/3/2024)
	Lee Juan Tyler (Chairman)		-	-		-	Email (10/30/2023) ltyler@sbtribes.com	-	-	-	Yes (1/3/2024)
	Carolyn Smith (Cultural Resources Coordinator)		-	1/8/2019		-	Email (10/30/2023) csmith@sbtribes.com	-	Phone (12/1/2023) 435-478-3700	-	Yes (1/3/2024)
	Louise Dixey (Cultural Resources Director)		-	-		-	-	-	Phone (12/1/2023) 435-478-3700	-	Yes (1/3/2024)
Northwest Band of the Shoshone Nation	Darren B. Perry (Former Chairman)	707 North Main St. Brigham City, Utah 84302	6/13/2018	1/8/2019		-	-	-	-	-	Yes (1/3/2024)
	Dennis Alex (Chairman)		-	-		-	Email (10/30/2023) Banner02@gmail.com	-	Phone (12/1/2023) 435-734-2286	-	Yes (1/3/2024)
	Brad Perry (Vice Chairman)		-	-		-	Email (10/30/2023) bparry@nwbshoshone.com	-	-	-	Yes (1/3/2024)
	Patti Timbimboo-Madsen (Cultural Resources)		-	1/8/2019		-	Email (10/30/2023) ptimbimboo@nwbshoshone.com	-	Phone (12/1/2023) 435-734-2286, x13	-	Yes (1/3/2024)
Confederated Tribes of the Goshute Reservation	Cleele Pete (Enviro. Protection Dept.)	HC61 Box 6104 195 Tribal Center Road Ibapah, Utah 84034	-	1/8/2019		-	Email (10/30/2023) Clell.pete@ctgr.us	-	-	-	Yes (1/3/2024)
	Rupert Steele (Former Chairman)		-	1/8/2019		-	-	-	-	-	Yes (1/3/2024)
	Amos Murphy (Chairman)		-	-		-	Email (10/30/2023) Amos.murphy@ctgr.us	-	-	-	Yes (1/3/2024)
Ute Indian Tribe of the Uintah & Ouray Reservation	Luke Duncan (Former Chairman)	P.O. Box 190 Fort Duchesne, Utah 84026	6/13/2018	1/8/2019		-	-	-	-	-	Yes (1/3/2024)
	Julius Murray (Chairman)		-	-		-	Email (10/30/2023) juliusm@utetribe.com	-	-	-	Yes (1/3/2024)
	Betsy Chapoose (THPO)		-	1/8/2019		-	Email (10/30/2023) betsyc@utetribe.com	-	Phone (12/8/2023) 435-478-3700	Has no concerns, is preparing letters (no letters received as of 1/2/2024)	Yes (1/3/2024)

Eastern Shoshone Tribe of the Wind River Reservation	Clint Wagon (Former Chairman)	P.O. Box 538 Fort Washakie, Wyoming 82514	-	1/8/2019		-	-	-	-	-	Yes (1/3/2024)
	John St. Clair (Chairman)		-	-		-	Email (10/30/2023) jstclair@easternshoshone.org	-	Phone (12/1/2023) 307-332-3532	-	Yes (1/3/2024)
	Lynette Bell (Former THPO)		-	1/8/2019		-	-	-	-	-	Yes (1/3/2024)
	Joshua Mann (THPO)		-	-		-	Email (10/30/2023) jmann@easternshoshone.org	-	Phone (12/1/2023) 307-335-2801	-	Yes (1/3/2024)
Skull Valley Band of Goshute Indians	Candace Bear (Chairwoman)	P.O. Box 448 Grantsville, Utah 84029	6/13/2018	1/8/2019		-	-	-	-	-	Yes (1/3/2024)

Notes: Cons= Consultation, THPO= Tribal Historic Preservation Office

1 – Tribe Consultation was initiated as part of the Scoping process and is documented in the Scoping Report included in Appendix A.
2 – Documentation in included in Appendix A.
3 – Date of receipt of mail delivery to Tribe.

5.2 Coordination

5.2.1 USFWS

The USFWS was invited to comment on the project during the scoping period. No comments have been received to date. A BE has been prepared for the project, which concluded that there would be no effect to ESA-listed species or designated critical habitat (see Appendix E).

5.2.2 UDWR

The UDWR was invited to comment on the project during the scoping period. No comments have been received to date for the project. A Utah state-listed species list was obtained as part of the biological resource analysis and the BE determined that there would be no impact to Utah state-listed species from the implementation of the Action Alternative.

5.3 Public Participation

During the scoping period, seven comments were received regarding the Proposed Project. One comment was provided to USDA-NRCS at the public scoping meeting and six additional comments were collected by North Ogden City prior to the public scoping meeting. The 30-day scoping period for this project began on June 13, 2018 and closed on July 13, 2018. The public scoping meeting was held on June 26, 2018, in North Ogden, Utah.

Following revisions to the Draft Plan-EA pertaining to substantive public comments, the Draft Plan-EA was published for public comment and a Public Meeting was held on August 9, 2023. The public comment period was held from July 26, 2023 to September 8, 2023. No comments were received during the public comment period. The FONSI was issued on April 5, 2024. The Notice of Availability (NOA) for the Final Plan-EA and FONSI will be published on April 19, 2024. All public comment documentation is included in Appendix A of the Final Plan-EA.

5.3.1 Public Participation Plan

The main goal of public participation is to involve diverse groups of the public, and government agency participants to solicit input and provide relevant and timely information throughout the NEPA review process. It is meant to engage all demographics of the public in the NEPA review process, who may be potentially affected by the proposed action. Outreach methods are described in the following section. **Table 5-2** lists the project's public outreach activities.

Table 5-2. Public Outreach Activities

Date	Purpose	Type
June 13, 2018	Scoping Notice Published	Scoping notice mailed and posted to North Ogden City and USDA-NRCS websites. Legal Notice published.
June 13, 2018	Scoping –Public Comment Period Open	Public comment period begins for project scoping.
June 26, 2018	Scoping Meeting	Public meeting was held.
July 13, 2018	Scoping Period Closed	Scoping comment period closed.

Date	Purpose	Type
July 26, 2023	Notice of the Draft Plan-EA Public Comment Period	Public meeting notice mailed and posted to website. Legal Notice published.
August 9, 2023	Draft Plan-EA Public Meeting	Public meeting was held.
September 8, 2023	Draft Plan-EA Public Comment Period Closed	Comment period for Draft Plan-EA was closed.
April 19, 2024	Final Plan-EA	Final Plan-EA and decision document published on USDA-NRCS Website.

5.3.2 Project Scoping

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

J-U-B coordinated with 23 local, state, and federal resource agencies regarding subjects pertinent to their jurisdiction, authority, and expertise. Agency coordination occurred via telephone, email, and written letter. Prior to initiating scoping, the USDA-NRCS approved a scoping letter and project map developed by J-U-B. The purpose of the scoping letter was to inform agencies of the Plan-EA and to request preliminary comments on the proposal. Formal coordination and consultation with tribes and SHPO was completed by USDA-NRCS.

A Public Scoping Open House was held on June 26, 2018, with the purpose of involving the public and gathering feedback regarding community natural resource concerns related to the Proposed Project. The public was encouraged to submit comments during the public scoping period that started June 13, 2018 and ended July 13, 2018.

Seven comments were received during the public scoping period. A summary of the comments received during the public open house and agency scoping are described in the Scoping Report (see Appendix A).

5.3.3 Agency Involvement

The North Ogden Project was developed from meetings with agencies and the public. USDA-NRCS, WBECD and North Ogden City used input from stakeholders to determine the conceptual design of the proposed action. J-U-B and USDA-NRCS managed the coordination and public involvement process for the project.

The scoping period was open for 30 days. The scoping notice gave a description of the project, location, and overview, purpose and need, and requested public participation. The scoping notice also identified the location of the public meeting, contact information to submit written comments, and the scoping period closure date. One public scoping meeting was held on June 26, 2018. Comments were requested for submittal via mail, e-mail, or facsimile. Comments cards and oral comments could have been submitted over the phone or in person.

5.3.4 Agency Plan-EA Reviews

USDA-NRCS reviewed and commented on the Draft Plan-EA prior to issuing the Draft Plan-EA for public review. Any agency comments on the Draft Plan-EA were addressed before the Draft Plan-EA was issued for public comment.

5.4 Draft Plan-EA Public Comment

As part of the NEPA process, NRCS published the Draft Plan-EA for the Proposed Project for public comment on July 26, 2023. The public comment period began on July 26, 2023 and closed on September 8, 2023. The Draft Plan-EA Open House was held on August 9, 2023. Participants were invited to submit a comment during the Public Meeting and/or by mail or email during the public comment period. No comments were received during the public comment period. A copy of the notification for the Open House and public comment period is location in Appendix A.

5.5 Final Plan-EA

A NOA was published in the paper of local record to notify the public when the Final Plan-EA and FONSI were issued by the NRCS, and copies have been made available at identified locations and for review online.

6 Preferred Alternative

6.1 Purpose & Summary

Based on the Action Alternative's ability to meet the purpose and need for the project, to have the least impacts to environmental and social resources, and the greatest net economic benefits of the available options, the Action Alternative was determined to be the Preferred Alternative.

The watershed area associated with the Preferred Alternative is 28,936 acres and is defined by the outer boundaries of the Fourmile Creek subwatershed (HUC 160201010602). The watershed area contains the municipalities of North Ogden, Farr West, Pleasant View and Harrisville. The watershed area is illustrated in the Watershed Map in Appendix B.

6.2 Rationale for Preferred Alternative Selection

Current infrastructure does not provide adequate floodwater storage to avoid flood damages similar to those that occurred in recent spring high runoff events. Additionally, the WBECD seeks to improve irrigation delivery efficiency to water users. The federally funded alternatives considered for detailed study in this Final Plan-EA include the No Action and the Action Alternative (see Chapter 3 Alternatives).

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

6.3 Measures to be Installed

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

- Storage Reservoir
- Pump Station
- Irrigation and Floodwater Pipelines
- Public Recreation Amenities

Storage Reservoir

A new 42.5-acre-foot (ac-ft) multi-purpose reservoir would be constructed for irrigation storage, floodwater management, and recreation (see Preferred Alternative Map in Appendix B). To control and minimize flooding, it was determined that North Ogden City needs a debris/detention feature with the capacity to hold 22 ac-ft. In addition, to meet the system's agricultural needs, WBECD requires an irrigation water storage reservoir with a 20.5-ac-ft capacity. Both needs would be met by the construction of the multi-purpose reservoir. The reservoir would be surrounded by a security fence and access to the reservoir would be controlled through gates. The irrigation water regulated through the reservoir and pump station would provide pressurized irrigation for the remaining 30% of the service area which includes portions of North Ogden City, Pleasant View City, and Harrisville City, covering approximately 2,753 acres.

Pump Station

An existing pump station on the North Ogden Canal would be removed because it is outdated and has not been in operation for many years. This is the only demolition that would be required, and there are no structures at the proposed reservoir site that would require demolition. A new pump station would be constructed near the reservoir site and would consist of three 100 horsepower (Hp) pumps and one 50 Hp pump to pressurize the remaining 30% of the service area. All future operation costs associated with the pump station will be the responsibility of WBECD.

Irrigation and Floodwater Pipelines

An approximately 3,000-foot pipeline, varying between 15” and 54” in diameter, would be installed from the existing diversion structure on the North Ogden Canal to convey irrigation and floodwater to the proposed reservoir. For a portion of the alignment, the pipeline would be installed immediately adjacent to an existing, irrigation pipeline that would be abandoned in place.

Two approximately 500-foot irrigation pipelines, varying between 4” and 12” in diameter would be installed from the reservoir and connect with existing irrigation pipelines to provide pressurization to the remaining 30% of the service area.

An approximately 1,000-foot floodwater pipeline, varying between 12” and 20” in diameter, would be installed from the reservoir and connect with an existing floodwater control pipeline to prevent/reduce potential flooding impacts.

Public Recreation Amenities

Public recreation amenities would include the construction of 2.5-acres of public open space, a .25-mile walking trail around the proposed reservoir, pavilion with restrooms, playground equipment, pickleball courts, and a parking area would be installed at the new reservoir site (see Appendix C for conceptual design of recreational facilities).

Table 6-1 describes the physical characteristics of the embankment and reservoir that would be constructed as part of the Preferred Alternative. **Tables 6-2** and **6-3** describe the physical characteristics of the flood protection and agricultural water management piping that would be installed as part of the Preferred Alternative.

Table 6-1. Embankment and Reservoir Summary

Feature	Dimension
Maximum Dam Height	5.5 ft
Dam Crest Elevation	4346.6
Auxiliary Spillway Crest Elevation	4344.6
Principal Spillway Crest Elevation	4343.6
Lowest Natural Ground Elevation at Dam	4341.1
Max Depth of Water Above Natural Ground (Auxiliary Spillway – Natural Ground Elevation)	3.5 ft
Reservoir Capacity at Auxiliary Spillway	42.5 ac-ft
Reservoir Capacity above Lowest Natural Ground Elevation	9.1 ac-ft
Agricultural Irrigation Capacity	20.5 ac-ft
Flood Control Capacity	22.0 ac-ft
Dam Crest Length	1,090 ft

Feature	Dimension
Dam Crest Width	8 ft
Upstream Slope of Dam	3H : 1V
Downstream Slope of Dam	2.5H : 1V

Table 6-2. Flood Protection Piping Summary

Size	Material	Length (ft)
15"	RCP	518
24"	RCP	2,650
36"	RCP	500
54"	RCP	1,050

Table 6-3. Agricultural Water Management Piping Summary

Size	Material	Length (ft)
4"	C-900 PVC	480
12"	C-900 PVC	2,260
16"	C-900 PVC	764
20"	C-900 PVC	81
60"	RCP Culvert	40

6.4 Mitigation

6.4.1 Avoidance & Minimization

Soils: Erosion may occur on disturbed and cleared areas within the project boundary during precipitation events. Proper sediment and erosion control BMPs, such as straw wattles or silt fencing, would be installed to prevent and control soil erosion.

Water Quality: Project design elements, including BMPs, would be used and would be implemented to protect water quality. Construction BMPs would include, but are not limited to, the following:

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

Air Quality: Fugitive dust, Mobile Source Air Toxics (MSATs), and GHG emissions increases associated with construction would be minimized by implementation of applicable BMPs. These include the following:

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

Plants: Vegetation would be removed in order to construct the storage reservoir. Vegetation removal would be limited to the smallest extent practical within this area. An herbaceous plant seed mixture, as approved by UDWR and USDA-NRCS, would be used in these areas cleared of trees and shrubs. All temporary disturbed areas would be revegetated with approved plants and seeds mixtures. There is no compensatory mitigation proposed for vegetation clearing associated with the project.

During construction activities, area roads would be utilized by trucks and equipment to access the site; however, implementation of construction BMPs would minimize the potential for transport of noxious weeds into the area. During construction and until the restoration area is fully established, disturbance areas would be maintained on a regular basis to prevent the establishment of noxious weeds and invasive plant species. Non-desirable plant species would be controlled by cleaning equipment prior to delivery to the project site, eradicating them before the start and during construction as identified, and routine monitoring after construction completion.

Animals: To minimize impacts to threatened, endangered, or state-listed species, construction would be timed to avoid breeding, nesting, and spawning for gray wolf, June sucker, and yellow-billed cuckoo. Overall, no impacts to these species are anticipated.

Construction activities would be limited to the smallest extent practicable within the Project Area and would occur outside migratory bird breeding/nesting periods unless surveyed by a qualified biologist for active nests no more than 5 days prior to the commencement of work.

If active nests are found during surveys, spatial buffers would be established in coordination with USFWS and USDA-NRCS. Construction activities within the buffer areas will be prohibited until a qualified biologist confirms that all nests are no longer active

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

6.4.2 Compensatory Mitigation

Compensatory mitigation would not be required for the Preferred Alternative.

6.5 Permits & Compliance

The following permits and compliance actions would be required for construction of the Preferred Alternative.

6.5.1 Federal

USACE

Under Section 404 of the CWA, a USACE permit is not anticipated.

USFWS

A BE has been conducted for the Proposed Project, which concluded that there would be no effect to threatened or endangered species or critical habitat. A copy of the BE has been included in Appendix E.

6.5.2 State

Utah Division of Water Quality

Under Section 401 of the CWA, an approval may be required to ensure the project would not violate state water quality standards. Certification is obtained as part of the USACE Section 404 Permit review process.

Under Section 402 of the CWA, a UPDES Storm Water General Permit for Construction Activities is required for construction activities that disturb more than 1 acre and may discharge pollutants to surface waters. A SWPPP would be developed, including submitting a Notice of Intent (NOI), to the Utah Division of Water Quality.

Utah SHPO

A Cultural Resources Inventory Report was submitted to the Utah SHPO to comply with Section 106 of the NHPA and for concurrence with a “no historic properties affected” determination. SHPO concurred with determination in a letter dated January 10, 2019.

If during construction, previously unevaluated cultural resources are discovered, then the area of discovery would be avoided, the area given adequate protection, and USDA-NRCS and SHPO would be notified. Procedures for discoveries outlined in the cultural resources USDA-NRCS State Level Agreement would be followed.

6.5.3 Local

- North Ogden City Permits
    - Grading and Excavation Permit
- Weber County Permits
    - Stormwater Construction Activity Permit
    - Stormwater Pollution Prevention Plan
    - Excavation Permit

The Watershed Agreement was completed and signed by the USDA-NRCS and the WBECD and North Ogden City following the approval of the Final Plan-EA.

6.6 Installation & Financing

6.6.1 Planned Sequence of Installation

The WBECD and North Ogden City would complete all approvals and permits for the project prior to the start of construction, which may require up to six months to obtain. The major construction elements for the Preferred Alternative would be sequenced to complete the critical path items first.

6.6.2 Responsibilities

The roles and responsibilities for the USDA-NRCS, the WBECD and North Ogden City would continue in accordance with this Plan-EA and the Watershed Agreement. The USDA-NRCS is responsible for leading the planning and review efforts. North Ogden City, WBECD and J-U-B are responsible for engineering design, environmental permits and construction implementation. USDA-NRCS would assist WBECD and North Ogden City during construction by providing oversight and certification of project completion.

6.6.3 Contracting

The WBECD and North Ogden City would oversee and administer the construction of the project in coordination with the USDA-NRCS.

6.6.4 Real Property & Relocations

A real property transaction would not be required for the Preferred Alternative. North Ogden City owns the property where the storage reservoir would be constructed.

6.6.5 Financing

The USDA-NRCS would provide 61% of the total construction cost for the Preferred Alternative with funding from the WFPO. The WBECD and North Ogden City are responsible for providing the remaining non-federally funded 39% of the construction, planning, and design costs.

6.7 Operation & Maintenance

Operation and maintenance of the irrigation infrastructure, floodwater infrastructure and storage reservoir would be shared by WBECD and North Ogden City. Operation of these facilities would include administration, management, and performance of non-maintenance actions needed to keep the facilities operational and safe. Maintenance includes performance of work, recording instrumentation data, preventing deterioration of structures, and repairing damage or replacement of the structure as needed to prevent failure. Damages to completed structures caused by normal deterioration, droughts, flooding, or vandalism are considered maintenance.

6.8 Costs

The installation cost estimate for the Action Alternative (Preferred and NED Alternative) is $15,224,408. Tables specified in Part 506 of the NWPM (2014) have been included to present information relevant to the costs and benefits of the Preferred and NED Alternative. Calculations

are based on a 102-year evaluation period and a discount rate of 2.75 percent (the Federal Water Resources FY 2020 discount rate).

The estimated installation cost in **Table 6-4** documents land status upon which the project structures reside, as well as federal and non-federal funding sources, respectively.

Table 6-4. Estimated Installation Costs
Fourmile Creek Watershed, Utah
(Dollars) 1/

Works of Improvement	PL 83-566 Funding 2/	Other Funds 2/	Total
North Ogden Irrigation and Flood Protection Reservoir	$11,972,423	$3,251,985	$15,224,408

1/ Price base: 2023
2/ All works of improvement will be on non-federal land.
Prepared March 2023

The estimated cost distribution in **Table 6-5** shows the estimated installation costs works of improvement between PL 83-566 funds and the costs borne by the applicant (other). **Table 6-6** shows the installation costs allocated to the various purposes for the project, as well as the sharing of costs allocated to each purpose.

Table 6-5. Estimated Cost Distribution – Water Resource Project Measures
Fourmile Creek Watershed, Utah
(Dollars) 1/

Agricultural Water Management - Storage Reservoir, Pump Station, and Irrigation Pipelines (Agricultural Water Management)	$5,872,055	$1,089,309	$272,327	$0	$7,233,691	$1,957,352	$0	$0	$15,000	$4,000	$1,976,352	$9,210,043
Flood Prevention - Storage Reservoir, Pump Station, and Floodwater Pipelines (Flood Prevention)	$2,598,488	$361,529	$90,382	$0	$3,050,399	$0	$0	$0	$15,000	$4,000	$19,000	$3,069,399
Recreation - Trail, Pavilion, Restrooms, Open Space, Playground Equipment, Courts, and Parking Lot (Public Recreation)	$1,252,633	$348,559	$87,140	$0	$1,688,332	$1,252,633	$0	$0	$0	$4,000	$1,252,633	$2,944,966
Total	**$9,723,177**	**$1,799,397**	**$449,849**	**$0**	**$11,972,423**	**$3,209,985**	**$0**	**$0**	**$30,000**	**$12,000**	**$3,251,985**	**$15,224,408**

1/ Price base: 2023. Prepared March 2023.
Note: Totals may not equal 100 due to rounding.

Table 6-6. Cost Allocation and Cost Sharing Summary Water Resource Project Measures
Fourmile Creek Watershed, Utah
(Dollars) 1/

Item	Cost Sharing											
	Project Costs				Public Law 83-566				Other			
	Agricultural Water Management	Flood Prevention	Public Recreation	Total	Agricultural Water Management	Flood Prevention	Public Recreation	Total	Agricultural Water Management	Flood Prevention	Public Recreation	Total
Construction	$7,829,407	$2,598,488	$2,505,267	$12,933,162	$5,872,055	$2,598,488	$1,252,633	$9,723,177	$1,957,352	$0	$1,252,633	$3,209,985
Engineering	$1,089,309	$361,529	$348,559	$1,799,397	$1,089,309	$361,529	$348,559	$1,799,397	$0	$0	$0	$0
Permits	$15,000	$15,000	$0	$30,000	$0	$0	$0	$0	$15,000	$15,000	$0	$30,000
Administration	$276,327	$94,382	$91,140	$461,849	$272,327	$90,382	$87,140	$449,849	$4,000	$4,000	$4,000	$12,000
Total	**$9,210,043**	**$3,069,399**	**$2,944,966**	**$15,224,408**	**$7,233,691**	**$3,050,399**	**$1,688,332**	**$11,972,423**	**$1,976,352**	**$19,000**	**$1,256,633**	**$3,251,985**

1/ Price base: 2023. Prepared March 2023.
Note: Totals may not equal 100 due to rounding.

Table 6-7 shows the number, estimated unit construction cost, and total cost for agricultural water management proposed.

Table 6-7. Agricultural Water Management – Estimated Construction Cost

Fourmile Creek Watershed, Utah
(Dollars) 1/

Item		Quantity 2/	Units	Estimated Unit Cost	Total Construction Cost
1	Excavation and haul off for reservoir	34,500	Cubic Yard	$25	$862,000
2	6" Reinforced concrete liner	131,100	Square Foot	$20	$2,622,000
3	Drainage below liner	1	Lump Sum	$200,000	$200,000
4	Supply piping	1	Lump Sum	$75,000	$75,000
5	Site Preparation	1	Lump Sum	$20,000	$20,000
6	Traveling Screen	1	Lump Sum	$80,000	$80,000
7	SCADA	1	Lump Sum	$40,000	$40,000
8	Dewatering	90	Days	$500	$45,000
9	Irrigation pump house and inlet structure	1	Lump Sum	$2,500,000	$2,500,000
10	Ramp from parking lot to reservoir	460	Square Foot	$8	$3,680
11	Distribution piping	1	Lump Sum	$300,000	$300,000
12	Electrical service	1	Lump Sum	$60,000	$60,000
	Construction Subtotal				$6,808,180
	Construction Contingency	15%			$1,021,227
	Construction Total				$7,829,407
	Engineering (8% Design, 8% Construction)	16%			$1,089,309
	Project Administration (USDA-NRCS)	4%			$272,327
	Project Administration (Sponsor)	1	Lump Sum		$4,000
	Permits	1	Lump Sum		$15,000
Total Agricultural Water Management Cost					**$9,210,043**

1/ Price base: 2023
2/ Estimated quantity subject to minor variation at time of detailed planning
Prepared March 2023

Table 6-8 shows the number, estimated unit construction cost, and total cost for flood prevention facilities proposed.

Table 6-8. Flood Protection and Detention Facilities – Estimated Construction Cost

Fourmile Creek Watershed, Utah

(Dollars) 1/

Item	Description	Quantity	Unit	Unit Price	Total Amount
1	Mobilization and SWPPP	1	Lump Sum	$60,000.00	$60,000
2	Excavation and haul off for detention	37,333	Cubic Yard	$25.00	$933,325
3	Clear and grub temporary access roadway. Haul and dispose of materials.	450	Linear Foot	$4.00	$1,800
4	Temporary 12' wide gravel access road	450	Linear Foot	$35.00	$15,750
5	Basin outlet control structure	1	Each	$30,000.00	$30,000
6	Emergency overflow	1	Each	$15,000.00	$15,000
7	10' rock apron around edge of water	1,300	Ton	$90.00	$117,000
8	Chain link fence around detention basin with privacy slats	1,650	Linear Foot	$40.00	$66,000
9	15" RCP Pipe	268	Linear Foot	$110.00	$29,480
10	24" RCP Pipe	2,650	Linear Foot	$150.00	$397,500
11	54" RCP Pipe	1,050	Linear Foot	$260.00	$273,000
12	54" flared end section	1	Lump Sum	$5,000.00	$5,000
13	Lower existing 36" RCP Pipe	500	Linear Foot	$125.00	$62,500
14	Catch basins	14	Each	$4,500.00	$63,000
15	Manhole	6	Each	$10,000.00	$60,000
16	72" diameter manhole	1	Each	$15,000.00	$15,000
17	8'x8’ junction box	3	Each	$15,000.00	$45,000
18	Basin inlet control structure and sediment trap	1	Each	$50,000.00	$50,000
19	Surface improvements on 2600 North (repair UDOT sidewalk, park stirp, etc.)	1	Lump Sum	$8,000.00	$8,000
20	Re-Grading at 2550 N basin	1	Lump Sum	$5,000.00	$5,000
21	Asphalt patch	900	Square Feet	$8.00	$7,200
	Construction Subtotal				$2,259,555
	Construction Contingency	15%			$338,933
	Construction Total				$2,598,488
	Engineering (8% Design, 8% Construction)	16%			$361,529
	Project Admiration (NRCS)	4%			$90,382
	Project Admiration (Sponsor)	1	Lump Sum		$4,000
	Permits	1	Lump Sum		$15,000
Total Flood Prevention					**$3,069,399**

1/ Price base: 2023

2/ Estimated quantity subject to minor variation at time of detailed planning

Prepared March 2023

Table 6-9 shows the number, estimated unit construction cost, and total cost for recreational facilities proposed.

Table 6-9. Recreational Facilities – Estimated Construction Cost
Fourmile Creek Watershed, Utah
(Dollars) 1/

Item		Quantity 2/	Units	Estimated Unit Cost	Total Construction Cost
1	Clear and grub roadway. Haul and dispose of materials. Fine grade and prepare site.	450	Linear Foot	$10	$4,500
2	Import fill material to subgrade	1,000	Ton	$22	$22,000
3	Construct roadway section	450	Linear Foot	$275	$123,750
4	Sanitary sewer line	460	Linear Foot	$80	$36,800
5	Sewer manhole	2	Each	$8,000	$16,000
6	Parking lot	13,180	Square Foot	$5	$65,900
7	Wrought iron fence around basin at entry	450	Linear Foot	$65	$29,250
8	6-foot wrought entry gate	1	Each	$5,000	$5,000
9	30-foot wrought iron parking lot gate	1	Each	$15,000	$15,000
10	8' wide concrete trail around top of berm	13,240	Square Foot	$4	$52,960
11	Linear playground equipment	1	Lump Sum	$200,000	$200,000
12	Restroom	1	Each	$200,000	$200,000
13	Bowery (20' x 20')	1	Lump Sum	$165,000	$165,000
14	Circular pavilion	1	Lump Sum	$40,000	$40,000
15	Concrete stairs	1,000	Square Foot	$20	$20,000
16	Trees	218	Each	$450	$98,100
17	Shrubs	98	Each	$75	$7,350
18	Landscaping fabric and bark	3,100	Square Foot	$5	$15,500
19	Landscaping grass & sprinkler	87,450	Square Foot	$2.25	$196,763
20	Landscaping fabric and rock	12,520	Square Foot	$6	$75,120
21	Park benches on concrete slab	18	Each	$1,500	$27,000
22	Picnic table on concrete slab	5	Each	$2,500	$12,500
23	Suspended concrete observation platform with guardrail	2	Each	$100,000	$200,000
24	Cantilever pergola	2	Each	$175,000	$350,000
25	Park area lights	10	Each	$5,000	$50,000
26	Bypass pump and waterfall feature	1	Lump Sum	$95,000	$95,000
27	Park information signs	1	Lump Sum	$5,000	$5,000

Item		Quantity 2/	Units	Estimated Unit Cost	Total Construction Cost
28	Park entry monument sign	1	Lump Sum	$15,000	$15,000
29	Park security equipment	1	Lump Sum	$35,000	$35,000
	Construction Subtotal				$2,178,493
	Construction Contingency	15%			$326,774
	Construction Total				$2,505,267
	Engineering (8% Design, 8% Construction)	16%			$348,559
	Project Administration (USDA-NRCS)	4%			$87,140
	Project Administration (Sponsor)	1	Lump Sum		$4,000
	Permits	1	Lump Sum		$0
Total Recreation Facilities Cost					**$2,994,966**

1/ Price base: 2023
2/ Estimated quantity subject to minor variation at time of detailed planning
Prepared March 2023

Table 6-10 shows the project cost amortized over the period of analysis (102 years).

Table 6-10. Estimated Average Annual NED Costs

Fourmile Creek Watershed, Utah

(Dollars) 1/

Measures	Project Outlays Amortization of Installation Cost	Project Outlays O&M and Replacement Cost	Total
Agricultural Water Management	$260,500	$67,700	**$328,200**
Flood Protection	$86,800	$1,800	**$88,600**
Recreation	$83,300	$73,800	**$157,100**
			88,600
Total	**$430,600**	**$143,300**	**$573,900**

1/ Price base: 2023. Calculated using FY 2020 Water Resources Discount Rate (2.75%) and 102-year period of analysis. Prepared March 2023

Table 6-11 summarizes the results of the flood damage reduction analysis conducted for this project.

Table 6-11. Floodwater Damage Reduction Benefits

Fourmile Creek Watershed, Utah

(Dollars) 1/

Item	Estimated Annual Damage 2/		
	Without Project (No Action Alternative)	With Project (Action Alternative)	Damage Reduction Benefit
Residential	$265,600	$137,600	$128,000
Commercial	$27,800	$19,900	$7,900
Crop and Pasture	$200	$100	$100
Total	**$293,600**	**$157,600**	**$136,000**

1/ Price base: 2023. Calculated using FY 2020 Water Resources Discount Rate (2.75%) and 102-year period of analysis.
2/ All flood damage is agriculture related. Agriculture-related damages include damages to rural communities.

Table 6-12 summarizes the benefits and costs of the project and documents the overall benefit to cost ratio of the proposed improvements.

Table 6-12. Comparison of Annul NED Benefits and Costs
Fourmile Creek Watershed, Utah
(Dollars) 1/

Project Measure	Average Annual Costs 2/	Ag. Related Damage Reduction Benefit	Recreation Benefit	Ag. Water Mgmt. Benefit	Total Annual Benefits	Benefit Cost Ratio	Net Annual Economic Benefit
Agricultural Water Management	$328,200	---	---	$360,300	$360,300	1.10	$32,100
Flood Protection	$88,600	$136,000	---	---	$136,000	1.53	$47,400
Recreation	$157,100	---	$252,800	---	$252,800	1.61	$95,700
Total	**$573,900**	**$136,600**	**$252,800**	**$360,300**	**$749,100**	**1.31**	**$175,200**

1/ Price base: 2023. Calculated using FY2020 discount rate (2.75%) and annualized over 102-year period of analysis.
2/ From Table 6-10.
Prepared March 2023.

Table 6-13. Structural Data—Dams with Planned Storage Capacity
Fourmile Creek Watershed, Utah

Item	Unit	Total
Class of structure	-	Low
Seismic zone[1]	-	Seismic Design Category D
Uncontrolled drainage area[2]	mi^2	0
Controlled drainage area[2]	mi^2	7.5
Total Drainage Area	mi^2	7.5
Runoff curve No. (1 day) (AMC II)	-	53.8
Time of concentration (Te)	Hrs	4.75
Elevation top dam	Ft	4346.6
Elevation crest auxiliary spillway	Ft	4344.6
Elevation crest high stage inlet[5]	Ft	4344.25
Elevation crest low stage inlet[5]	Ft	4344.25
Auxiliary spillway type	-	Concrete Channel
Auxiliary spillway bottom width	Ft	20
Auxiliary spillway exit slope	Percent	40%
Maximum height of dam	Ft	5.6
Volume of fill	Yd^3	4,952
Total capacity[3]	Ac-ft	46.2
Sediment submerged[4]	Ac-ft	0
Sediment aerated[4]	Ac-ft	0
Beneficial use (Irrigation, Recreation)	Ac-ft	20.5
Floodwater retarding	Ac-ft	25.7
Between high and low stage inlet[5]	Ac-ft	0

Item	Unit	Total
Surface Area		
Sediment pool[4]	Acres	0
Beneficial use pool (Irrigation, Recreation)	Acres	3.0
Floodwater retarding pool[3]	Acres	3.8
Principal Spillway Design		
Rainfall volume (1-day)	In	2.54
Rainfall volume (10-day)	In	5.35
Runoff volume (10-day)	In	1.5
Capacity of low stage outlet (max.)	Ft^3/s	74
Capacity of high stage outlet (max)[2]	Ft^3/s	311
Dimensions of conduit	In	24
Type of conduit	-	Reinforced Concrete Pipe
Frequency operation-auxiliary spillway	Percent chance	1%
Auxiliary Spillway Hydrograph		
Rainfall volume	In	2.54
Runoff volume	In	0.8
Storm duration	Hrs	24
Velocity of flow (Ve)	Ft/s	11.2
Max. reservoir water surface elevation	Ft	4345.6
Freeboard Hydrograph		
Rainfall volume	In	2.54
Runoff volume	In	0.8
Storm duration	Hrs	24
Max. reservoir water surface elevation	Ft	4345.6
Capacity Equivalents		
Sediment volume[4]	In	0
Floodwater retarding volume[6]	In	0.5
Beneficial volume (Irrigation/Recreation)[7]	In	0

1/ Seismic Design Category D based on International Building Code and Soil Site Class D
2/ The existing piping to the constructed reservoir has a maximum flow capacity of 150 cfs so all of the drainage area is shown as under controlled. Flows above 150 cfs take a different route.
3/ Crest of auxiliary spillway.
4/ Reservoir to be cleaned annually after irrigation season. No sediment storage is planned for in reservoir.
5/ Single inlet with an upstream restriction of 150 cfs.
6/ Due to the upstream watershed routing, the volume of the reservoir is sufficient to capture the flood events.
7/ Beneficial volume is filled by water from a canal and not dependent on rainfall.

7 References

Bureau of Labor Statistics (BLS). 2018a. *"*Ogden-Clearfield Metropolitan Area." *Economy at a Glance,* Accessed 8/22/18. Web. https://www.bls.gov/eag/eag.ut_ogden_msa.htm.

BLS. 2018b. *"Utah*." *Economy at a Glance,* Accessed 8/22/18. Web. https://www.bls.gov/eag/eag.ut.htm.

Center for Climate Strategies (CCS). 2007. *Climate Change and Public Health in Utah*. Environmental Public Health Tracking.

Code of Federal Regulations. 2004. *Title 36 Chapter VIII Part 800 Subpart C Section 800.16 Definitions*. Accessed February 15, 2023. https://www.ecfr.gov/current/title-36/chapter-VIII/part-800/subpart-C/section-800.16.

Code of Federal Regulations. 2020. *Title 40 Chapter V Subchapter A Part 1502 Section 1502.14*. Accessed February 15, 2023. https://www.ecfr.gov/current/title-40/chapter-V/subchapter-A/part-1502/section-1502.14.

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

Federal Emergency Management Agency (FEMA). 2005. Flood Insurance Rate Map #49057C0211E.

Garfin, G., A. Jardine, R. Merideth, M. Black, and S. LeRoy, eds. 2013. Assessment of Climate Change in the Southwest United States: A Report Prepared for the National Climate Assessment. A report by the Southwest Climate Alliance. Washington, DC: Island Press.

J-U-B ENGINEERS, Inc. (JUB). 2018. Water Resources Assessment for the North Ogden Watershed Plan Environmental Assessment [Weber County, Utah]. Prepared for the U.S. Army Corps of Engineers. November 2018.

JUB. 2020. Biological Evaluation for the North Ogden Watershed Plan Environmental Assessment [Weber County, Utah]. Prepared for the U.S. Department of Agriculture- Natural Resource Conservation Service. June 2020.

Maas, D. 1997. *North American Game Animals*. Cowles Creative Publishing, Minnetonka, Minnesota.

National Oceanic and Atmospheric Association (NOAA). 2020. "Statewide Precipitation Ranks National Temperature and Precipitation Maps." Accessed 7/22/20. Web. https://www.ncdc.noaa.gov/temp-and-precip/us-maps.

Natural Resources Conservation Service (NRCS). 2012a. *Farmland Protection Policy Act*. United States Department of Agriculture. Web. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1049284.pdf.

NRCS. 2012b. Utah Invasive Species List. Accessed 3/7/2023. Web. https://efotg.sc.egov.usda.gov/references/public/UT/NRCS_UT_Invasive_Species_List_2012.pdf

NRCS. 2014a. National Engineering Handbook, Irrigation Guide, KS210-652-H,, Amend. KS31, KS652-4.1 thru 4.25. Web. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_030990.pdf.

NRCS. 2014b. *National Watershed Program Handbook* (2nd ed.). Washington, D.C.: USDA NRCS. Accessed 7/22/20. Web. https://directives.sc.egov.usda.gov.

NRCS. 2014c. *National Watershed Program Manual* (4th ed., Amend 1). Washington, D.C.: USDA NRCS. Accessed 7/22/20. Web. https://directives.sc.egov.usda.gov.

NRCS. 2018. *Watershed and Flood Prevention Operations (WFPO) Program*. Accessed 7/22/20. Web. https://www.nrcs.usda.gov.

NRCS. 2019. "Web Soil Survey." *United States Department of Agriculture*, Accessed 3/4/20. Web. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

NatureServe. 2019. "NatureServe Explorer (Version 7.1)." *NatureServe*, Arlington, Virginia. Accessed 7/22/20. Web. www.natureserve.org/explorer.

North Ogden City. 2005. Municode 10-4-7: Flood Hazard Reduction.10-4-7-B.1. Accessed February 15, 2023. https://northogden.municipalcodeonline.com/book?type=code#name=10-4-7:_FLOOD_HAZARD_REDUCTION.

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

Ramsey, R.D., Banner, Roger E., and Ellie I. Leydsman McGinty. 2009. *Watersheds of Utah. Utah State University Extension*. Rangeland Resources of Utah Section 4, pp. 29-38. Web. https://extension.usu.edu/rangelands/ou-files/RRU_Section_Four.pdf.

Ramsey, R.D. and Neil E. West. 2009. *Vegetation of Utah*. Utah State University Extension. Rangeland Resources of Utah Section 7, pp. 49-94. Web. https://extension.usu.edu/rangelands/ou-files/RRU_Section_Seven.pdf.

Scott, Robert and Travis Lund. 2014. *Land Use Survey*. North Ogden City, Utah.

Silger, W.F., and J.W. Sigler. 1987. *Fishes of the Great Basin: a natural history*. University of Nevada Press, Reno, Nevada.

U.S. Census Bureau (Census). 2010. "Quick Facts." Accessed 7/22/20. Web. https://www.census.gov/quickfacts/fact/table/northogdencityutah,webercountyutah,ut,US/PST045217.

Census. 2023a. "United States." Accessed 2/14/2023. Web. https://data.census.gov/profile/United_States?g=0100000US.

Census. 2023b. "Utah." Accessed 2/14/2023. Web. https://data.census.gov/profile/Utah?g=0400000US49.

U.S. Department of Agriculture (USDA). 1997. Department Regulation 5600-002. *Environmental Justice*. Washington D.C.; December 15, 1997.

USDA. 2014. *2012 Census of Agriculture: Utah State and County Data* (vol. 1 part 44). Accessed 7/22/20. Web. https://www.nass.usda.gov/Publications/AgCensus/2012/Full_Report/Volume_1,_Chapter_2_County_Level/Utah/.

USDA. 2017. *Utah Agriculture Statistics and Utah Department of Agriculture and Food Annual Report*. Web. https://ag.utah.gov/documents/2017completeAnnualBulletin.pdf.

USDA Soil Conservation Service (SCS). 1968. *Soil Survey Davis-Weber Area, Utah*. pp. 1.

United States Environmental Protection Agency (EPA). 1977. Floodplain Management (Executive Order 11988). Accessed February 15, 2023. httpsL//www.epa.gov/cwa-404/floodplain-management-executive-order-11988.

EPA. 2017a. "Greenhouse Gas (GHG) Emissions." Accessed 7/22/20. Web. https://www.epa.gov/ghgemissions.

U.S. EPA. 2017b. "WATERS GeoViewer." Accessed 7/22/20. Web. https://www.epa.gov/waterdata/waters-geoviewer.

U.S. EPA. 2018a. "Identifying and Listing Impaired Waters under the Clean Water Act." *Impaired Water and TMDLs*, Accessed 7/22/20. Web. https://www.epa.gov/tmdl/impaired-waters-and-tmdls-identifying-and-listing-impaired-waters.

U.S. EPA. 2018b.TMDL Report. Accessed 7/22/20. Web. https://ofmpub.epa.gov.

U.S. EPA. 2020a. EJ 2020 Glossary. Accessed 9/30/21. Web. https://www.epa.gov/environmentaljustice/ej-2020-glossary.

U.S. EPA. 2020b. "Utah Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants." *Nonattainment Areas for Criteria Pollutants (Green Book),* Accessed 7/22/20. Web. https://www.epa.gov/green-book.

U.S. EPA. 2023. "EJSCREEN Census ACS Summary Report." *EJSCREEN 2016-2020 Estimate*, Accessed 2/14/2023. Web. https://www.epa.gov/ejscreen.

U.S. Fish and Wildlife Service (USFWS). 1999. *June Sucker (Chasmistes liorus) Recovery Plan*. Region 6, USFWS. Denver, Colorado.

USFWS. 2020a. *IPaC: Information for Planning and Consultation*. Accessed 6/30/20. Web. https://ecos.fws.gov/ipac/.

USFWS. 2020b. *Migratory Bird Treaty Act*. Accessed 7/22/20. Web. https://www.fws.gov/mountain-prairie/migbirds/permits.php#:~:text=The%20Migratory%20Bird%20Treaty%20Act%20(text%20%7C%20summary)%20makes%20it,permit%20issued%20pursuant%20to%20Federal.

USFWS. 2020c. *The Bald and Golden Eagle Protection Act*. Accessed 7/22/20. Web. https://www.fws.gov/midwest/eagle/permits/bagepa.html.

USFWS. 2020d. “Wetlands Mapper.” *National Wetlands Inventory (NWI)*, Accessed 1/17/18. Web. https://www.fws.gov/wetlands/.

USFWS. 2023. *IPaC: Information for Planning and Consultation*. Accessed April 2023. Web. https://ecos.fws.gov/ipac/.

U.S. Water Resources Council (USWRC). 1983. *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*.

Utah Association of Counties (UAC). 2017. *2017 Utah Counties Fact Book*. Web. http://uacnet.org/wp-content/uploads/2014/08/2017-Utah-Counties-Fact-Book.pdf.

Utah Department of Agriculture and Food (UDAF) 2022. *State of Utah Noxious Weed List.* https://ag.utah.gov/farmers/plants-industry/noxious-weed-control-resources/state-of-utah-noxious-weed-list/

Utah Department of Agriculture and Food (UDAF). 2017. *2017 Utah Agriculture Statistics and UDAF Annual Report*.

Utah Department of Environmental Quality (UDEQ). 2017. *Utah Division of Air Quality 2017 Annual Report*. Web. https://documents.deq.utah.gov/air-quality/annual-reports/DAQ-2018-001005.pdf.

UDEQ. 2018. *Utah Environmental Interactive Map*. Accessed 8/22/18. Web. https://enviro.deq.utah.gov/.

Utah Department of Transportation (UDOT). 2016. *Annual Average Daily Traffic*. Accessed 8/24/18. Web. https://www.udot.utah.gov/main/f?p=100:pg::::1:T,V:5053.

Utah Department of Wildlife Resources (UDWR). 2015. *Blue Ribbon*. Accessed 7/22/20. Web. https://wildlife.utah.gov/hotspots/brwaterbody.php?id=43.

Utah Department of Wildlife Resources-Utah Conservation Data Center (UDWR-UCDC). 2017. *Utah’s State Listed Species by County*. Web. https://dwrcdc.nr.utah.gov/ucdc/ViewReports/sscounty.pdf.

UDWR-UCDC. 2020. “Learn about Utah’s species.” *UCDC*, Accessed 7/22/20. Web. http://dwrcdc.nr.utah.gov/ucdc/default.asp.

Utah Division of Water Rights. 2011. *Water Right Information*. Accessed 7/22/20. Web. https://www.waterrights.utah.gov/wrinfo/default.asp.

Utah Division of Water Rights. 2020. *Water Rights Map*. Accessed 7/22/20. Web. https://maps.waterrights.utah.gov/EsriMap/map.asp?layersToAdd=canals.

Utah Geological Survey (UGS). 2004. “Geologic Map of the Ogden 7.5’ Quadrangle, Weber and Davis Counties, Utah.” *Utah Department of Natural Resources (UDNR)*, by Adolph Yonkee and Mike Lowe. Web. https://ugspub.nr.utah.gov/publications/geologicmaps/7-5quadrangles/m-200.pdf.

UGS. 2008. “Liquefaction Species Study Areas, Wasatch Front and Nearby Areas, Utah.” *UDNR*, compiled by Gary E. Christenson and Lucas M. Shaw.

Utah Weed Control Association. 2018. *Utah's Noxious Weed List*. Accessed 7/22/20. Web. http://www.utahweed.org/weeds.htm.

Washington State Department of Transportation (WSDOT). 2018. *Biological Assessment Preparation – Advanced Training Manual, Version 1-2018*. Olympia, Washington. Web. www.wsdot.wa.gov/sites/default/files/2018/01/18/Env-FW-BA_ManualCH07.pdf.

Weber County Weed Department. 2004. *New and Invading Weeds*. Accessed 7/22/20. Web. http://www.co.weber.ut.us/weeds/invading.php.

Williams, F., Chronic, L., & Chronic, H. 2014. *Roadside Geology of Utah* (2nd Ed). Mountain Press Publishing Company.

8 List of Preparers

8.1 Plan-EA Preparers

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

Table 8-1. List of Preparers

Name	Title (Years of Experience)	Agency/Firm	Education	Other
Norm Evenstad	Asst. State Conservationist—Water Resources (30)	USDA-NRCS	B.S. Geology	P.G.
Derek Hamilton	Water Resources Coordinator (25)	USDA-NRCS	M.S. Environmental Science B.S. Geography	-
Jonathan Bingham	Watershed Engineer (16)	USDA-NRCS	M.S. Civil and Environmental Engineering B.S. Civil and Environmental Engineering	P.E. (UT) CFM
Marti Hoge	Senior Environmental Specialist (16)	J-U-B Engineers	M.A. Environmental Policy & Politics B.S. Anthropology	-
Greg Seegmiller	Professional Engineer (33)	J-U-B Engineers	M.S. Civil and environmental Engineering B.S. Civil and Environmental Engineering	P.E. UT
Derek Moss	Senior Environmental Planner (14)	J-U-B Engineers	M.B.A. Strategic Management B.S. Urban Planning	AICP
Autumn Davies	Senior Biologist (18)	J-U-B Engineers	M.S. Botany B.S. Natural Resources Conservation and Management – Forest Ecology B.S. Journalism – Environmental Journalism	
Sheri Ellis	Archaeologist and Architectural Historian (30)	Certus Environmental Solutions	M.S. American Studies B.S. Psychology and Anthropology	Utah PLPCO Permit No. 47 BLM Permit No. 20UT85088

9 Distribution List

A notice of availability for the Final Plan-EA will be distributed to the following government agencies/staff and organizations.

9.1 Federal Government

U.S. Army Corps of Engineers
US. Environmental Protection Agency
U.S. Fish & Wildlife Service

9.2 Tribal Government

Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Northwestern Band of the Shoshone Nation
Shoshone-Bannock Tribes of the Fort Hall Reservation
Confederated Tribes of the Goshute Reservation
Ute Indian Tribe of the Uintah and Ouray Reservation

9.3 State Government

Congressman Blake Moore, 1st District
Senator Mike Lee
Senator Mitt Romney
Board of Water Resources
Utah Department of Public Safety
Utah Department of Agriculture
Utah Department of Transportation
Utah Division of State History
Utah Division of Water Quality
Utah Division of Wildlife Resources
Utah Public Policy Coordination Office
Western Regional Office, Division of Water Rights

9.4 Local Government

City of Farr West
City of Harrisville
North Ogden City
North View Fire District
Pleasant View Fire Department
Pleasant View City
Weber County

9.5 Businesses and Organizations

Maria Montessori Academy
North Shore Aquatic Center
Utah Rivers Council

9.6 Private Parties

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

10 Acronyms, Abbreviations, and Short Forms

Acronym/Abbreviation	Term
ac-ft	Acre-feet
ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
BE	Biological Evaluation
BGEPA	Bald and Golden Eagle Protection Act
BLS	Bureau of Labor and Statistics
BMP	Best Management Practice
BOD	Biological Oxygen Demand
CAA	Clean Air Act
CCNO	City Code North Ogden
CCS	Center for Climate Strategies
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
Cfs	Cubic Feet per Second
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted Decibel
DEQ	Department of Environmental Quality
DPS	Distinct Population Segment
DR	Departmental Regulation
EA	Environmental Assessment
EIS	Environmental Impact Statement
EJ	Environmental Justice
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GHG	Green House Gases
HFC	Hydrofluorocarbons
HHS	Health and Human Services
Hp	Horsepower
HUC	Hydrologic Unit Code
I-15	Interstate-15
IPaC	Information for Planning and Consultation
ISB	Intermountain Seismic Belt

J-U-B	J-U-B ENGINEERS, Inc.
MBTA	Migratory Bird Treaty Act
MLRA	Major Land Resource Area
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NED	National Economic Development
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
N_2O	Nitrous Oxide
NO_x	Nitrogen Oxides
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
NWPH	National Watershed Program Handbook
NWPM	National Watershed Program Manual
O_3	Ozone
PAR	Population at Risk
Pb	Lead
PFC	Perfluorocarbons
Plan-EA	Watershed Plan-Environmental Assessment
PLSS	Public Land Survey System
PM	Particulate Matter
RCPP	Regional Conservation Partnership Program
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
ROW	Right-of-way
SCS	Soil Conservation Service
SF_6	Sulfur hexafluoride
SFHA	Special Flood Hazard Area
SIP	State Implementation Plan
SHPO	State Historic Preservation Officer
SLO	Sponsoring Local Organization
SO_2	Sulfur Dioxide
SO_x	Sulfur Oxides
SPCC	Spill Prevention Control and Countermeasure
SR-134	State Route-134
SWPPP	Storm Water Pollution Prevention Plan
SWReGAP	Southwest Regional Gap Analysis Project
THPO	Tribal Historic Preservation Officer
TMDL	Total Maximum Daily Load

UCDC	Utah Conservation Data Center
UDAF	Utah Department of Agriculture and Food
UDEQ	Utah Department of Environmental Quality
UDWR	Utah Division of Wildlife Resources
UPDES	Utah Pollution Discharge Elimination System
US-89	US Route-89
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
UST	Underground Storage Tank
USWRC	U.S. Water Resources Council
VOCs	Volatile Organic Compound
WBECD	Weber-Box Elder Conservation District
WFPO	Watershed and Flood Prevention Operations
WPFPA	Watershed Protection and Flood Prevention Act
WMA	Wildlife Management Area
WRA	Water Resources Assessment