



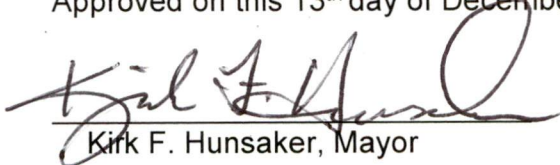
RESOLUTION 12-02-2017
A RESOLUTION APPROVING A WATERSHED FLOOD PREVENTION PROJECT FUNDING AGREEMENT WITH THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICES (NRCS)

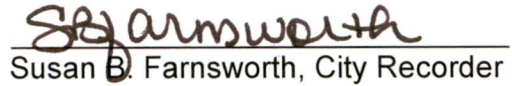
BE IT HEREBY RESOLVED:

SECTION 1: The attached documents represent the Watershed Flood Prevention Project Funding Agreement with the United States Department of Agriculture, Natural Resources Conservation Services.

SECTION 2: This Resolution shall become effective upon passage.

Approved on this 13th day of December, 2017.


Kirk F. Hunsaker, Mayor


Susan B. Farnsworth, City Recorder



AGREEMENT #: 68-8D43-18-
SPONSOR: Santaquin City, Utah
WATERSHED: Santaquin Watershed

WATERSHED FLOOD PREVENTION OPERATIONS
STATEMENT OF WORK

I. PURPOSE

The purpose of this agreement is for the United States Department of Agriculture, Natural Resources Conservation Service, hereinafter referred to as the "NRCS", to provide assistance to Santaquin City, Utah, hereinafter referred to as the "Sponsor", for the Santaquin Watershed project under Watershed Flood Prevention Operations (WFPO).

II. DESCRIPTION OF ESTIMATED COSTS

A. The estimated cost for the Project to the above specified levee is outlined below:

Description of Work	Estimated Federal Cost Share	Estimated Sponsor Cost Share	Estimated Total Cost of Project
Planning	\$370,000	N/A	\$370,000
Total Cost	\$370,000	N/A	\$370,000

This agreement currently includes funding for the planning phase. If additional funds become available to totally complete the project through construction, an amendment will be proposed with the Sponsor. If agreed by the parties this agreement will be amended accordingly. This agreement includes clauses for other phases that may or may not be funded.

B. COST SHARE

1. NRCS pays 100 percent of the cost. Sponsor cost share is \$0.00.

III. RESPONSIBILITIES OF THE PARTIES

A. Sponsor will—

1. Prepare a watershed supplemental plan with the appropriate planning concept engineering design needed. Prepare design, construction specification, and drawings in accordance with standard engineering principles that comply with NRCS programmatic requirements; and/or install the designed construction. The Sponsor must ensure each description of the work described in section II.A. above is reviewed, concurred, and approved by NRCS. Sponsor must

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not move to the next project work described in section II.A. above until the prior work is concurred and approved by NRCS.

2. Planning must follow the policy set forth in the NRCS Title 390, National Watershed Program Manual (NWPM), Part 505, which is incorporated by reference. Sponsor may obtain a full copy of the above referenced manual at <http://directives.sc.egov.usda.gov/> or the NRCS Utah State office.
3. Design must follow the policy set forth in the NRCS National Engineering Manual Part 511. This includes obtaining all necessary permits, land rights, and easements in accordance with the policy directive section 505.36. A U.S. Army Corps of Engineers Permit 404 must be obtained prior to proceeding to construction.
4. The Sponsors will obtain the services of a professional registered engineer, with the concurrence of NRCS, to prepare the design, specifications, and drawings for the construction of the dam. The Sponsors must obtain NRCS review and concurrence on the design, construction plans and specifications.
5. Develop a quality control plan (QCP) for the project and submit it for NRCS review and concurrence.
6. Secure all necessary lands rights and permits for completion of the work of improvement prior to moving into construction. Certify land rights by completing Form NRCS-ADS-78, "Assurances Relating to Real Property Acquisition." A licensed and practicing attorney's opinion as to the adequacy of real property rights is required.
7. Contract for services and construction, award and administer any contracts for the installation of the work for the project specified in this agreement in accordance with the Code of Federal Regulations (CFR), 2 CFR § 200.317 through 200.326, applicable state requirements, and the Sponsors' procurement regulations, as appropriate. See general terms and conditions attached to this agreement for a link to the CFR. In accordance with 2 CFR § 200.326 contracts must contain the applicable provisions described in Appendix II to Part 200. Davis-Bacon Act would not apply under this Federal program legislation.
8. The contracts for services and construction described in this Agreement shall not be awarded to the Sponsor or to any firm in which any Sponsor's official or any member of such official's immediate family has direct or indirect interest in the pecuniary profits or contracts of such firms. Reference 2 CFR § 200.318 regarding standards of conduct covering conflicts of interest and governing the performance of its employees engaged in the selection, award, and administration of contracts.
9. The Sponsor must provide all construction inspection and quality assurance for the project but must allow NRCS to perform periodic progress checks.

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10. Notify NRCS of environmental clearance, modification of construction plans, and any unresolved concerns and issues prior to award of any contracts for installation of the work for the project specified in this agreement.
11. Provide NRCS with a copy of all solicitation and request for bids documents prior to release, as well as all awarded contracts and contract modifications.
12. Accept all financial and other responsibility for any excess costs resulting from its failure to obtain, or delay in obtaining adequate land and water rights; natural resource rights; or Federal, State, and local permits and licenses needed for the work described in this agreement.
13. Take reasonable and necessary action of all contractual and administrative issues arising out of contracts awarded under this agreement.
14. Designate a project liaison to serve between the Sponsor and NRCS and identify that person's contact information with this executed agreement. Any change in the project liaison during the term of this agreement must be immediately communicated to NRCS.
15. Arrange for and conduct final inspection of completed work with NRCS and provide a certification statement to NRCS that the project was completed in accordance with contractual requirements and the terms of this agreement. Secure written concurrence of the State Conservationist before notifying the contractor of the acceptance of the job.
16. The sponsor must provide NRCS with documentation of the actual cost incurred for the services for determination of final credit values.
17. Pay the contractor for all services performed in accordance with the agreement and submit a SF 270, "Request for Advance and Reimbursement," to the NRCS Program/Technical Contact with all documentation to support the request. Payments will be withheld until all required documentation is submitted and complete.
18. Upon determination of technical acceptability of the completed work, the Sponsor must assume responsibility for the revised operation and maintenance (O&M) plan as provided by NRCS upon acceptance of designs and in accordance with Title 180, Part 500 of the NRCS Operation and Maintenance Manual and Title 390, Part 505, Subpart B, Section 505.11, of the NRCS National Watershed Program Manual.
19. Appoint a contracting officer and an authorized representative who will have authority to act for the contracting officer, listing their duties, responsibilities, and authorities. Furnish such information in writing to the NRCS State Conservationist.
20. Be responsible for all administrative expenses necessary to arrange for and carry out the works of improvement described in section II.A. These administrative matters include but will not be limited to facilities, clerical expenses, and legal counsel, including the fees of such attorney or attorneys deemed necessary by NRCS to resolve any legal matters.

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21. Comply with the applicable requirements in the attached General Terms and Conditions of this agreement.
22. Provide copies of site maps to appropriate Federal and State agencies for environmental review. Notify NRCS of environmental clearance, modification of construction plans, or any unresolved concerns prior to award of the contracts for construction of the works of improvement.
23. Ensure that requirements for compliance with environmental and cultural resource laws are incorporated into the construction contract for the works of improvement described in section II.A.
24. Ensure that adequate accident prevention measures are incorporated into the construction contract for the works of improvement described in section II.A. This may require the inclusion of an appropriate accident prevention clause and supplement such as the NRCS supplement to OSHA Parts 1910 and 1926, be made a part of the construction contract. Secure concurrence of the State Conservationist before approving a waiver or an adaptation of any of the safety provisions.
25. Ensure that a written release from the contractor of all claims against the Sponsor arising by virtue of the contract, other than claims in stated amounts as may be specifically excepted by the contractor, be incorporated into the terms of the construction contract and said release is a condition for final payment to the contractor.
26. Ensure the information in the System for Award Management (SAM) is current and accurate until the final financial report (SF 425) under this award or final payment is received, whichever is later.
27. Dispose of all claims resulting from the contract; secure prior written concurrence of the State Conservationist if NRCS funds are involved.
28. Take reasonable and necessary actions to dispose of all contractual and administrative issues arising out of the contract awarded under this agreement. This includes, but is not limited to disputes, claims, protests of award, source evaluation, and litigation that may result from the project. Such actions will be at the expense of the Sponsor, including any legal expenses. The Sponsor will advise, consult with, and obtain prior written concurrence of NRCS on any litigation matters in which NRCS could have a financial interest.
29. Sponsor must indemnify and hold NRCS harmless to the extent permitted by State law for any costs, damages, claims, liabilities, and judgments arising from past, present, and future acts or omissions of the Sponsor in connection with its acquisition and management of the Watershed Flood Prevention Operations Program pursuant to this project agreement. Further, the Sponsor agrees that NRCS will have no responsibility for acts and omissions of the Sponsor, its agents, successors, assigns, employees, contractors, or lessees in connection with the acquisition and management of the Watershed Flood Prevention Operations Program pursuant to this project agreement that result in violation of any laws and regulations that are now or that may in the future become applicable.

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30. Be liable to the NRCS for damages sustained by the NRCS as a result of the contractor failing to complete the work within the specified time. The damages will be based upon the additional costs incurred by the NRCS resulting from the contractor not completing the work within the allowable performance period. These costs include but are not limited to personnel costs, travel, etc. The NRCS will have the right to withhold such amount out of any monies that may be then due or that may become due and payable to the Sponsor. This liability is not applicable to the extent that the contract performance time is extended by court judgment unless such judgment results from actions of the Sponsor not concurred in by NRCS.
 31. Take necessary legal action, including bringing suit, to collect from the contractor any monies due in connection with the contract, or upon request of NRCS, assign and transfer to NRCS any or all claims, demands, and causes of action of every kind whatsoever that the Sponsor has against the contractor or his or her sureties.
 32. Retain all records dealing with the award and administration of the contract for 3 years from the date of the Sponsor's submission of the final request for reimbursement or until final audit findings have been resolved, whichever is longer. If any litigation is started before the expiration of the 3-year period, the records are to be retained until the litigation is resolved or the end of the 3-year period, whichever is longer. Make such records available to the Comptroller General of the United States or his or her duly authorized representative and accredited representatives of the Department of Agriculture or cognizant audit agency for the purpose of making audit, examination, excerpts, and transcriptions.
 33. The Sponsor must secure at its own expense all Federal, State, and local permits and licenses necessary for completion of the work described in section III as well as any necessary natural resource rights and provide copies of all permits and licenses obtained to NRCS.
- B. NRCS will—
1. Provide a detailed Plan of Work for development of the Plan-EA/EIS/EE and a detailed Engineering-Design Plan of Work to be referenced in assembling Engineering Design components for the project.
 2. Review and concur with construction plans and specifications and the QCP developed by the Sponsor.
 3. Designate a Government representative (GR) to serve as liaison with the Sponsor and identify that person's contact information with this executed agreement.
 4. Periodically perform progress checks during construction and participate in the final construction inspection.
 5. Review and concur with watershed supplemental plans, designs, construction plans and specifications and all other contract documents developed for or by the Sponsor.

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6. Provide authorized assistance such as, but not limited to, estimates of contract costs, length of contract period, results of tests and studies as available, site investigations, design and layout, and drawings and specifications, as requested by the Sponsor, and as its resources permit.
7. Consult with the Sponsor as requested in preparing the invitation for bids and awarding and administering the contract.
8. Provide the services of Government Representative for final inspection.
9. Make payment to the Sponsor covering the NRCS's share of the cost upon receipt and approval of SF-270, withholding the amount of damages sustained by NRCS as provided for in this agreement.

IV. MILESTONES

1	Sponsor solicitation for Planning estimate	December 2017
2	Planning Start	December 2017
3	Project Public Scoping Meeting estimate	January 2018
4	Progress Reports	Monthly
5	Preliminary Draft Plan-EA/EIS Review	August 2018
6	Preferred Alternative Public Meeting	October 2018
7	Final Draft Plan-EA/EIS	December 2018

V. SPECIAL PROVISIONS

- A. The furnishing of financial, administrative, and/or technical assistance above the original funding amount by NRCS is contingent on there being sufficient unobligated and uncommitted funding in the Watershed Flood Prevention Operations Program that is available for obligation in the year in which the assistance will be provided. NRCS may not make commitments in excess of funds authorized by law or made administratively available. Congress may impose obligational limits on program funding that constrains NRCS's ability to provide such assistance.
- B. In the event of default of a construction contract awarded pursuant to this agreement, any additional funds properly allocable as construction costs required to ensure completion of the job are to be provided in the same ratio as construction funds are contributed by the parties under the terms of this agreement. Any excess costs including interest resulting from a judgment collected from the defaulting contractor, or his or her surety, will be prorated between the Sponsor and NRCS in the same ratio as construction funds are contributed under the terms of the agreement.
- C. Additional funds, including interest properly allocable as construction costs as determined by NRCS, required as a result of decision of the CO or a court judgment in favor of a claimant will be provided in the same ratio as construction funds are contributed under the terms of this agreement. NRCS will not be obligated to contribute funds under any agreement or commitment made by the Sponsor without prior concurrence of NRCS.

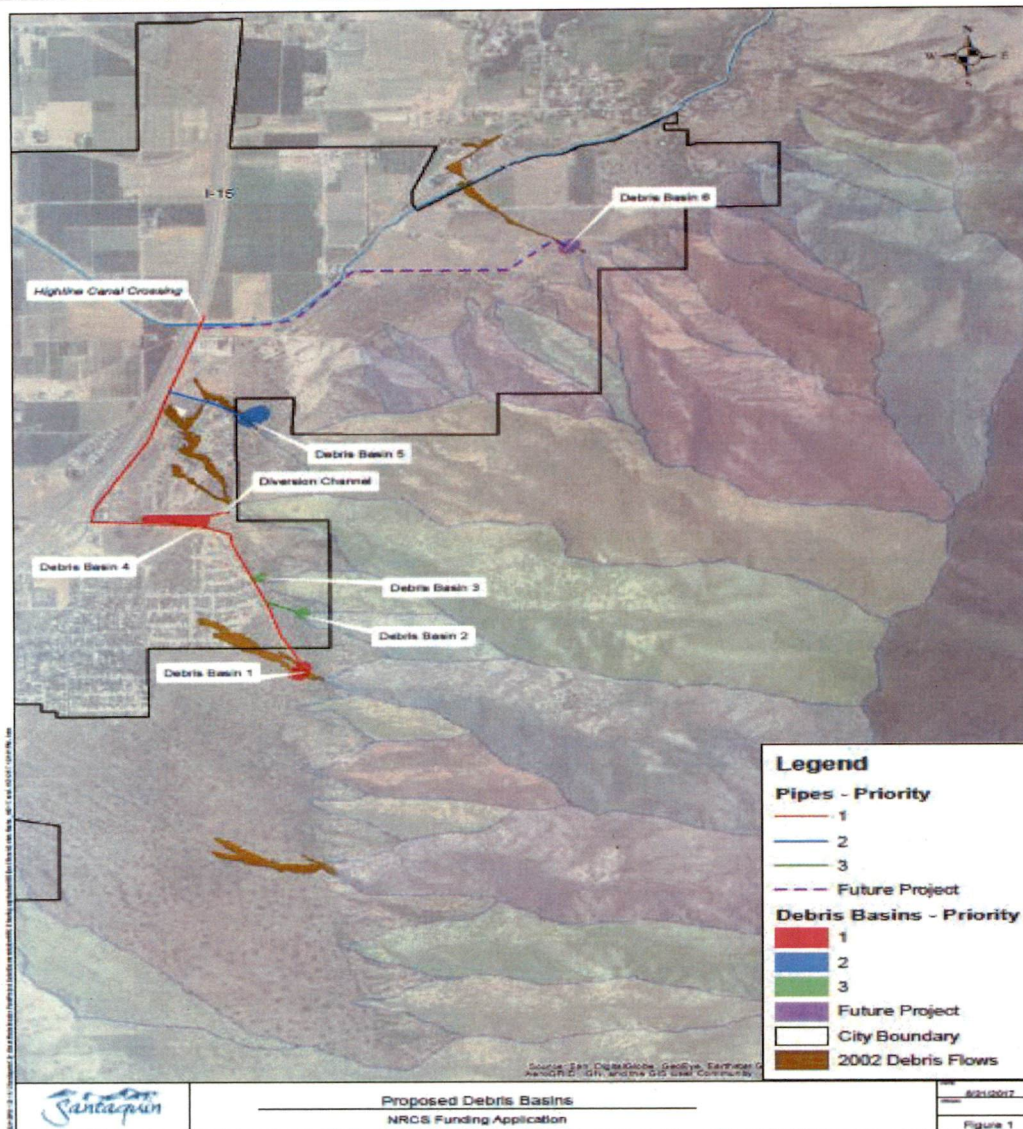
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- D. The State Conservationist may make adjustments in the estimated cost to NRCS for constructing the works of improvement. Such adjustments may increase or decrease the amount of estimated funds that are related to differences between such estimated cost and the amount of the awarded contract or to changes, differing site conditions, quantity variations, or other actions taken under the provisions of the contract.
- E. Except for item V-D. above, this document may be revised as mutually agreed through a written amendment duly executed by authorized officials of all signatory parties to this agreement.
- F. NRCS, at its sole discretion, may refuse to cost share should the Sponsor, in administering the contract, elect to proceed without obtaining concurrences described in this agreement.

**Statement of Work
For Preparation of a
Supplemental Watershed Plan-Environmental Assessment (Plan-EA)
for Santaquin Watershed
Utah County, Utah**

I. INTRODUCTION

The USDA-Natural Resources Conservation Service (NRCS) requires a Watershed Plan-Environmental Assessment (Plan-EA) or Environmental Impact Statement (EIS) pursuant to Public Law 83-566, the Watershed Protection and Flood Prevention Act. The watershed measures and study area proposed for the Supplemental Plan-EA analysis are identified in Figure 1. The final approved project boundary cannot exceed 250,000 acres per program authority. The selected contractor will coordinate with Santaquin City (Sponsor) and NRCS to finalize the watershed study boundary and the proposed watershed measures to be evaluated in the Supplemental Plan-EA.



Santaquin City is the primary contracting authority in cooperation with NRCS and is referred to herein as NRCS and Sponsor, anticipate and reserve the right in making the task order award with or without discussions. The task order and the work areas will be defined as groups or as a whole unit. Tasks for development of the Plan-EA will include an amount of engineering/design so as to accurately define and evaluate alternatives proposed in the Plan-EA for technical feasibility, socio-economics, benefits and impacts.

An aggressive schedule with milestones are required to meet the NRCS review requirements and help minimize the plan drafts and revisions. Efficient progressive project management in full cooperation with NRCS and sponsor, is the goal of this contracting activity.

The watershed plan is being developed as a requirement for technical assistance and funding that has been received by Santaquin City to prepare a Watershed Project Plan-EA for the purpose of implementing a range of eligible watershed protection measures that will be evaluated during the development of the Plan-EA.

Watershed Plan-EA Development – The PL83-566 Watershed Program requires the development of a “physically, environmentally, socially, and economically sound improvement plan” to be implemented over a

specific period of years. A Watershed Plan-EA will be developed as the first component of the proposed project. The final project boundary must not exceed 250,000 acres per program authority.

Project measures to be proposed and evaluated in the Plan-EA will be considered with public input and prioritized through the Sponsor and NRCS.

II. STATEMENT OF WORK

1. This Statement of Work (SOW) is for the preparation of the Watershed Plan-EA with Design for any approved measures upon authorization of the Plan-EA. The SOW provides for the **(a)** identification of alternatives, **(b)** an analysis of the alternatives and **(c)** an analysis of economic and environmental impacts of the proposed alternative, their appropriate documentation and review under the requirements of the National Environmental Policy Act (NEPA). The NEPA analysis and documentation will identify and evaluate all relevant impacts, conditions, and issues associated with the selected/proposed alternative in accordance with the President's Council on Environmental Quality's (CEQ) Regulations outlined in 40 CFR parts 1500 - 1508, hereafter referred to as the CEQ regulations, the NRCS procedures for implementing NEPA found at 7 CFR Part 650, NRCS General Manual Part 410, and the NRCS National Environment Compliance Handbook. As this is also a Watershed Plan, the Watershed Plan-Environmental Assessment (Plan-EA) will be developed in accordance with the NRCS National Watershed Program Manual (NWPM-390-500-M, 4th Ed., Apr 2014, as amended January 2015); particularly Part 501-Development of Watershed Project Plans.
2. In addition to meeting the requirements of NEPA, the Plan-EA must also document compliance with the related environmental impact analysis requirements of the following statutes and executive orders, to include their implementation regulations and guidelines: Clean Water Act; Clean Air Act; Safe Drinking Water Act; Federal Water Pollution Control Act; Farmland Protection Policy Act; Endangered Species Act; Wild and Scenic Rivers Act; National Historic Preservation Act; Archeological and Historic Preservation Act; Executive Order 11988, Floodplain Management; Executive Order 11990, Protection of Wetlands; and Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low- Income Populations.
3. The Contractor shall be responsible for the professional and technical accuracy of all work or services rendered. The Contractor will work with the sponsor to avoid duplication of efforts. Products submitted by the Contractor shall fully meet the requirements of the NRCS. Submittals will be reviewed by the NRCS for compliance with its requirements and criteria. Errors and/or deficiencies resulting from the Contractor's performance shall be corrected by the Contractor at no additional cost to the NRCS.
4. This description of the work and services provides the technical details expected from the Contractor. Any changes and additions to the contract scope must be authorized in writing by the NRCS's Contracting Officer.
5. In completing this Plan-EA, the Contractor will follow the technical criteria and guidance contained in the following documents: Council on Environmental Quality's Regulations For Implementing the Procedural Provisions of the National Environmental Policy Act; Council on Environmental Quality's "Forty Most Frequently Asked Questions"; Council on Environmental Quality's "Environmental Justice: Guidance Under the National Environmental Policy Act"; U.S. Water Resources Council's Floodplain Management Guidelines For Implementing Executive Order 11988; and other published federal regulations and guidelines for implementing the requirements listed in Section.

The Watershed Plan will be formulated in accordance with the policy detailed in the NWPM-390-500-M, 4th Ed., Apr 2014, as amended January 2015, Section 501.12 Plan Formulation A.

The alternatives required in development of the Plan-EA:

- 1) All reasonable alternatives that address the purpose and need for action must be presented in the watershed project plan, including those not within the program authorities of the NRCS and those not preferred by sponsors. The future-without-project (FWOP) conditions or no- action alternative must also be presented in each watershed project plan.
- 2) For alternatives that were eliminated from detailed study, the rationale for this elimination will be provided. All alternatives developed or considered will be documented as part of the administrative record.
- 3) All relevant public and NRCS identified resource concerns noted during scoping must be addressed by one or more alternatives and analyzed in the Plan-EA or Plan-EIS.
- 4) For a watershed project plan involving flood protection, consideration must be given to alternative measures to prevent or reduce flood damage, including but not limited to the following:
 - i. Flood-proofing of structures
 - ii. Floodplain regulation
 - iii. Acquisition of floodplain lands for recreational, fish and wildlife, and other public purposes
 - iv. Moving buildings and facilities
 - v. Conversion of land use to forest
- 5) Project land treatment measures will not be formulated to address onsite economic benefits such as reducing production costs or increasing yields. However, onsite benefits should be included in the documentation and evaluation of the alternative plans. All costs, including operation, maintenance, and replacement costs, expected to be incurred over the period of analysis must be included.

The following list of specific tasks must be completed to fulfill the obligations of this SOW. The contractor will coordinate with the Sponsor and NRCS to avoid duplication of efforts. Note: If it's determined during the planning process that an Environmental Impact Statement (EIS) level document is required, tasks may be adjusted to account for additional requirements deemed appropriate to finalize an EIS.

Tasks	Description of Tasks
1	Attend and Participate in Kick-off Meeting
2	Prepare Public Participation Plan
3	Prepare, Update, and Maintain Mailing Lists
4	Prepare Notice(s) of Scoping Meeting(s) and Issue Locally
5	Hold Scoping Meeting(s)
6	Prepare Scoping Report
7	Attend and Participate in Progress Review Meetings
8	Maintain Bibliography of References and Data Sources
9	Complete Inter-Agency Coordination, Documentation, and Data Compilation
10	Prepare Description of the Proposed Alternative
11	Prepare Preliminary(s) Draft PLAN-EA (PDPLAN-EA)
12	Prepare Draft PLAN-EA For Distribution (DPLAN-EA)
13	Prepare Draft PLAN-EA Notice of Availability and Public Meeting Notice(s) for Draft PLAN-

	EA and Issue Locally
14	Hold Public Meeting on Draft PLAN-EA and Prepare Summary Report
15	Prepare Preliminary(s) Final Plan-EA
16	Prepare Final Plan-EA For Distribution
17	Prepare Availability Notice For Final PLAN-EA and Issue Locally
18	Draft Finding of No Significant Impact (FONSI) (Optional - grantee may want to complete this.)
19	Maintain and Provide Administrative Record
20	Prepare and Manage Schedule For PLAN-EA Process
21	Prepare Monthly Progress Reports
22	Attend Unscheduled Meetings

III. OBJECTIVE

- a. The principal objective of this SOW is to provide the Sponsor and NRCS with NEPA analyses and documents which are complete, including objective appraisals of the positive and negative effects of the proposed alternative implementation methods and sites, and mitigation measures. The PLAN-EA shall comply, both procedurally and analytically, with the requirements of the NRCS and CEQ regulations and all applicable laws and executive orders. It shall also contain analyses, documentation, and inter-agency reviews mandated to include compliance with their procedural components.
- b. The NRCS is the customer and the agency of record for this PLAN-EA. The NRCS, within the U. S. Department of Agriculture (USDA), will be closely involved in the PLAN-EA preparation process and will review the Contractor's work products, to ensure NRCS NEPA policy and procedures are being followed. The draft and final PLAN-EA will be issued by the NRCS, and any identified cooperating agency or agencies.

IV. STUDY AREA

- a. The areas of interest for evaluation of the environmental and socioeconomic effects are to be finalized during the planning process in coordination with the Sponsor and NRCS and is not to exceed an area of 250,000 acres. The Sponsor and NRCS shall provide available pertinent NEPA-related documents which may be used to ascertain data gaps needed for a complete Final Plan-EA. All existing data, inventories, and reports should be utilized so as to not duplicate NEPA efforts in completion of the Plan-EA.

V. EXISTING DATA/DOCUMENTS AVAILABLE

The NRCS and Sponsor/s can provide, upon request, pertinent data readily available to help with completion of the Plan-EA.

VI. COMPLETION DATE

All work and services under this contract for the preparation of the PLAN-EA must be completed in accordance with the approved schedule for this SOW, with timelines for major events or milestones to be determined in accordance with Section VIII of this SOW.

VII. DESCRIPTIONS OF TASKS

The following section further defines the specific tasks that must be completed to fulfill the obligations of this SOW.

Task 1: Attend and Participate in Kickoff Meeting. Appropriate personnel from the Contractor's staff will participate in a one day meeting to be held either at an NRCS or Sponsor office or at an appropriate site in the vicinity of the proposed project, within 21 days of the Notice to Proceed (NTP). The meeting will be chaired by the NRCS and include the possible attendance of any initially identified cooperating State and Federal agencies. The Contractor must be prepared to actively participate in the meeting and lead a discussion of the total time frame for the preparation of the PLAN-EA as well as the time frame related to the scoping process.

Task 2: Prepare Public Participation Plan. The Contractor will develop and implement this plan. The plan will include public involvement opportunities including public meetings and newspaper notices. The Contractor will prepare a draft plan and coordinate its contents with all cooperating agencies prior to submitting it to the NRCS for its review and approval. Any NRCS comments will be incorporated into the final plan.

In developing the plan, the Contractor with the assistance of the NRCS and the cooperating agencies will identify all interested stakeholders for inclusion in mailing lists and will assure that adequate cross-sections of the public are represented including interested citizens and environmental organizations, any affected low income or minority populations, affected local, state and federal agencies, and any other agencies with jurisdiction or special expertise concerning the environmental impacts to be addressed in the PLAN-EA.

The plan will address the timing of mail distributions and public notices. The latter will be issued at least two (2) weeks prior to the scheduled public scoping meeting(s) and concurrent with filing of the DPLAN-EA and FPLAN-EA, respectively. Notices will be published in the non-legal section of the newspaper(s) with copies sent to parties on the mailing lists. The DPLAN-EA newspaper notice will include both the notice of availability of the DPLAN-EA and the schedule and location(s) for the DPLAN-EA public meeting(s). The FPLAN-EA notice will notify the public of the availability of the FPLAN-EA. Notices will be drafted by the Contractor and submitted to the NRCS for approval prior to their release to the media. Draft news releases will be submitted in time to accommodate processing by the NRCS for publication in the news media (minimum 10 days prior to scheduled meetings or release of NEPA document). A total of 4 news releases will be prepared by the Contractor: one (1) prior to the scoping meeting(s); one (1) concurrent with filing of the DraftPLAN-EA and prior to its public meeting(s); one (1) concurrent with filing the FinalPLAN-EA; and one (1) concurrent with the completion of the Finding of No Significant Impact (FONSI).

The public participation plan will establish the appropriate format for each public meeting. At least two (2) public meetings are envisioned, one (1) for scoping purposes and one (1) for receiving comments on the DraftPLAN-EA. All public meetings will be held near the location of the proposed alternative and in a facility convenient for the attendance of the affected public.

In order to comply with Executive Order 12898 regarding environmental justice concerns, the public participation plan will incorporate means to include potentially affected minority and low income populations within the public involvement program. Public notices will be bi-lingual, if an area affected by the proposed alternative has a large population of non-English speaking residents. The plan will also incorporate public participation and notice requirements that apply to the presence of specific environmental resources or conditions, such as those required by the executive orders on flood plain management and wetland protection. To the extent possible, these resource specific public participation/notice requirements will be completed concurrently with other public participation requirements. All public documents, notices, and meetings will be concise, understandable and readily accessible to the public.

Task 3: Prepare, Update and Maintain Mailing Lists. The Contractor will prepare, continue to update and maintain the active public mailing list; including all interested or affected agencies, interested parties, various news media and public libraries throughout the area of environmental impact, and individuals commenting during the scoping process or during public review of the Draft PLAN-EA (DPLAN-EA). The public mailing list will be used for distribution of the notices of availability for the DPLAN-EA and Final PLAN-EA (FPLAN-EA), public meeting announcements, news releases, other notices to the public, and distribution of the DPLAN-EA and FPLAN-EA. The mailing list will be edited periodically to include those individuals responding to the scoping requests, other correspondents, and those individuals who attended public meetings; and to delete those requesting removal from the list, changes in addresses, and undeliverable addresses. Electronic versions of the mailing lists or printed labels will be provided to the NRCS upon request.

Task 4: Prepare Notice of Scoping Meeting(s) and Issue Locally. The Contractor will be responsible for preparing and publishing the Notice of Scoping Meeting(s) in newspaper(s) of general circulation within the affected area(s). The notices will be published in these newspapers approximately 14 days and 7 days prior to a scheduled meeting. The Contractor will provide any draft public notices for NRCS review at least 7 days prior to the proposed publication date. A copy of the public notice of the meeting will be mailed by the Contractor to the entire mailing list for receipt approximately two weeks prior to the scheduled meetings.

Task 5: Hold Scoping Meeting(s). The Contractor, in consultation with the NRCS, shall schedule, provide all logistic support (including leasing of a meeting room and obtaining services for audio/visual recording) and conduct the public scoping meeting(s) to gain input from the public concerning the scope of issues and level of analyses to be considered in the DPLAN-EA. The NRCS's representative will make opening statements at the meeting. The Contractor's Project Manager and other key personnel (total of two -four individuals) will be present to explain the NEPA process and the purpose of scoping and to facilitate and conduct the meeting. Graphical displays, including maps and charts, will be provided by the Contractor as appropriate. It is anticipated that these public scoping meetings will be held approximately 30 days after NTP. Other scoping activities such as meeting with Federal, state and local entities on specific issues may be determined as necessary. For the purposes of planning, the Contractor should expect to hold one (1) scoping meeting in the geographic area of the proposed alternative. The need for more than one scoping meeting will be discussed in the Kickoff Meeting (Task 1) and included in the public participation plan (Task 2). See the NRCS National Environmental Compliance Handbook for additional information on how the scoping process is to be conducted by the Contractor.

Task 6: Prepare Scoping Report. In addition to the meeting transcript, the Contractor will prepare a report summarizing the results of agency and public scoping coordination. The report will include a spreadsheet or other tabular format for compiling and sorting public responses obtained at the scoping meeting, and other public or agency scoping comments received by mail. The Contractor will submit a draft report for NRCS and cooperating agency review and approval and incorporate all comments into the final report.

Task 7: Attend and Participate In Progress Review Meetings. The Contractor will, in consultation with the NRCS, schedule and conduct progress review meetings with the cooperating agencies, at critical points within the PLAN-EA schedule. These meetings will be interactive in nature, and will require at least one day per meeting. It is anticipated that all of these meetings will be held in the NRCS's or Sponsor office. The Contractor is expected to have in attendance or otherwise available sufficient members of the Contractor's PLAN-EA team to adequately address the major issues and environmental impacts to be addressed during the meeting.

Task 8: Maintain Bibliography of References and Data Sources. The Contractor will develop and continue to update the bibliography, with data sources and reports noted. The updated bibliography will be incorporated into the DPLAN-EA. The bibliography will be limited to references used in the PLAN-EA.

Task 9: Complete Inter-Agency Coordination, Documentation and Data Compilation. Prior to beginning substantive analytical work on the DPLAN-EA, the Contractor should become familiar with the available program, site, and environmental data for the proposed alternative.

Contractor shall identify additional information needs and data gaps and proceed to identify sources of missing information and obtain that information or data.

The Contractor is required to identify and obtain baseline data to be furnished by the various cooperating agencies. The Contractor will maintain regular communications with the cooperating agency throughout preparation of the PLAN-EA, and will compile all data collected by the Contractor or provided by cooperating agencies. The Contractor will serve as the repository for all reference documents throughout the process. The collected information will be included in the administrative record at the conclusion of the PLAN-EA. The Contractor will track agency progress and continue coordination with the agencies to obtain agency-provided data on a timely basis. Assistance with agency coordination will be provided by the NRCS, as necessary or appropriate.

Task 10: Prepare Description of Proposed Alternative. The Contractor shall review information provided by the NRCS concerning the specific activities identified in Section 1 of this SOW. The information gathered shall be assembled into concise and descriptive statements of the proposed activities to be addressed in the PLAN-EA. Information will be formatted for inclusion as the Description of Proposed Alternative section of the PLAN-EA. The narrative shall identify all the relevant data and activities necessary to describe the proposed alternative.

Task 11: Prepare Preliminary Draft Plan-EA (PDPLAN-EA). The Contractor shall prepare a PDPLAN-EA in accordance with the following requirements:

- a) Documentation of Baseline Environmental Conditions. The Contractor will use the information/data furnished by the NRCS, Sponsor's and/or the cooperating agencies to prepare narratives documenting baseline environmental and socio-economic conditions. The Contractor shall assemble and review existing data describing the environmental resources of the study area. The Contractor will visit the sites of the proposed alternative for the study area as well as gather additional existing information from other approved sources, as necessary. The information assembled must be sufficient to (1) assess the environmental, historic, economic, and social values that will be affected, either beneficially or adversely, by the proposed alternative in the study area and (2) demonstrate compliance with related environmental and NRCS programmatic requirements.
- b) Throughout the PLAN-EA process, pertinent data gaps that have a bearing on the analyses shall be reported to the NRCS immediately upon identification. The Contractor will gather additional details from the other State and cooperating Federal agencies as well as other available sources to fully describe baseline conditions and projected future conditions. The Contractor shall coordinate with the NRCS to determine the validity of data to be incorporated into the PDPLAN-EA, regardless of the source. If the NRCS concludes that additional data are required, an appropriate modification to the contract may be negotiated.
- c) Preparation of Preliminary Draft PLAN-EA (PDPLAN-EA). Using information describing the proposed alternative, baseline environmental information, scoping information, and information resulting from the data gathering tasks and site visits, the Contractor will address the potential impacts anticipated in the study area proposed alternative, as defined in Section 1 of this SOW. The PDPLAN-EA will be prepared in conformance with the CEQ regulations, the NRCS National Watershed Program Manual (NWPM) and the NRCS National Environmental Compliance Handbook.
 - (1) **Analysis.** The Contractor is responsible for identifying, documenting, and analyzing relevant conditions, issues, and effects associated with the proposed alternative. The document should be structured so as to include only the data in the Affected Environment Section required to perform the analyses. Extraneous data, just because it is available, should not be included. The Analyses of Proposed Alternative Section should not introduce new data, but should assess the proposed alternative against the data base presented in the Affected Environment. The Contractor will incorporate appropriate analyses provided by cooperating agencies (e.g. engineering analyses and

design as developed by partners) or other approved sources into the PDPLAN-EA, in appropriate level of detail and editing to provide a consistently structured document.

- (2) **Format of the PDPLAN-EA.** The format to be used is the one specified in the NRCS National Watershed Program Manual (NWPM) for a Watershed Plan-EA. Other format and content requirements expressed in the CEQ regulations as well as the NRCS National Environmental Compliance Handbook shall also be integrated into the Plan-EA. The text shall be error free, complete, clear, concise, and grammatically correct. The main text of the report shall be written in a manner suitable for reading by persons not professionally trained for the technical subject discussed. The PDPLAN-EA will be an analytical document, with a minimum of attached reference material. Acronyms shall be used only on a limited basis. Any acronyms used shall be defined on first use and included in a list of acronyms page.
- (3) **Submittal No.1 of PDPLAN-EA.** The Contractor shall submit an electronic and six (6) printed copies of the PDPLAN-EA to the NRCS National Water Management Center (NWMC) and cooperating agencies for review and comment.
- (4) **Preliminary Draft PLAN-EA Review Meeting.** After the PDPLAN-EA has been submitted to the NRCS and cooperating agencies for review, the NRCS and cooperating agencies will furnish comments to the Contractor. A meeting between the Contractor, the NRCS and the cooperating agencies will be held at the NRCS's office to discuss revisions to the PDPLAN-EA. This meeting will discuss the comments and resolve any problems or questions that may arise. The meeting will also discuss the Notice of Availability (NOA) that will be required to announce the availability of the DPLAN-EA to the public and the upcoming public meeting. The Contractor's Project Manager, and any other key personnel that the NRCS deems necessary (estimated 4 personnel), will attend this PDPLAN-EA review meeting.

Task 12: Prepare Draft PLAN-EA (DPLAN-EA) For Distribution. Following the review and acceptance of the PDPLAN-EA by the NRCS, the Contractor shall proceed with preparation of the DPLAN-EA document.

- a) The front cover of the DPLAN-EA (and FPLAN-EA) shall be a high quality cover, containing the title of the document, the NRCS name and those of any cooperating agencies, date of official release (month and year), and the name of the Contractor who prepared the document.
- b) Upon approval of the DPLAN-EA by the NRCS, the Contractor shall provide an electronic copy of the approved DPLAN-EA and 5 printed copies of the DPLAN-EA to the NRCS. The Contractor will provide mailing labels for public distribution of the DPLAN-EA.

Task 13: Prepare DPLAN-EA Notice of Availability and Public Meeting Notice(s) for Draft PLAN-EA and

Issue Locally. The Contractor shall prepare a draft and final Notice of Availability (NOA) of the DPLAN-EA for NRCS approval. The locally published NOA should also give the location and the date and time of the public meeting(s) for receiving comments on the Draft PLAN-EA. After consulting with the NRCS, the Contractor shall prepare and advertise the NOA in the non-legal section of the local newspaper or newspapers, as specified in the public participation plan. The Contractor shall also prepare a draft news release. The draft NOA and news release shall be submitted to the NRCS for approval. The NOA and news release will be timed for publication concurrent with filing the DPLAN-EA, and at least 30 days prior to date of the public meeting(s). The Contractor shall distribute the NOA to the entire mailing list approximately 30 days prior to the scheduled meeting(s).

Task 14: Hold Public Meeting(s) on Draft Plan-EA and Prepare Summary Report. The Contractor, in consultation with the NRCS, shall schedule, provide all logistic support, and conduct the public meeting(s) for DraftPLAN-EA review. The public meeting should be held no earlier than 30 days after the NOA is locally published. The NRCS's representative can make an opening statement at the public meeting. The Contractor's

Project Manager and other key personnel will be present at the public meeting to present the proposed alternative and evaluation framework, and to discuss the probable environmental effects of the proposed alternative. NRCS and other cooperating agencies will be present to assist in response to questions from the public. Graphical displays, including maps and charts, will be provided by the Contractor. The Contractor will provide audio/visual recording services to transcribe each meeting and prepare a summary report for each public meeting, with a hard copy of the transcript attached, for NRCS review. See also NRCS National Environmental Compliance Handbook for additional guidance on conducting the public meeting for the DPLAN-EA.

Task 15: Prepare Preliminary(s) Final PLAN-EA (PFPLAN-EA). The Contractor shall prepare the PFPLAN-EA in accordance with the CEQ regulations and this task will include the following:

- a) Responses to Public Comments on DPLAN-EA. The Contractor, in coordination with the NRCS and the cooperating agencies, will prepare responses to public comments on the DPLAN-EA and provide Five (5) copies of the comments and drafted responses to the NRCS and cooperating agencies for review and comment. Responses to comments may also include additional tables, graphics or additional data for review and incorporation into the text or appendices of the FPLAN-EA as well as corrected text from the DPLAN-EA. The Contractor will coordinate with the NRCS on the method to be used for comment/response, identifying major comments and any conflicting comments. A one-day progress review meeting will be held at the NRCS's office to coordinate responses to comments. All responses will be subject to approval by the NRCS prior to finalization for inclusion in the PFPLAN-EA.
- b) Preliminary FPLAN-EA (PFPLAN-EA). The Contractor shall incorporate the approved revisions and responses to comments into a PFPLAN-EA. Five (5) copies of the PFPLAN-EA will be submitted to the NRCS and cooperating agencies for review and approval. Additional agency comments will be incorporated into the FPLAN-EA, as directed by the NRCS.
- c) PFPLAN-EA Administrative Review. The Contractor will prepare a full version PFPLAN-EA for NRCS review and approval. The PFPLAN-EA should show the contents, page layout, paper quality, cover quality, print quality, tables, graphics, photographs, and related appearance criteria. The FPLAN-EA format will be the same as for the PDPLAN-EA outlined above. The use of high quality graphics, photos, and other illustrative materials is encouraged. Five (5) copies of any required revisions to the PFPLAN-EA will be furnished to the NRCS for final review and approval. If necessary, a PFPLAN-EA administrative review meeting will be held to resolve any open issues.

Task 16: Prepare Final Plan EA For Distribution. This task is completed in the same manner as the task for preparing the Draft PLAN-EA for distribution.

Task 17: Prepare Final Plan-EA. The Contractor will provide the following support for preparation, filing, and notice of the FPLAN-EA.

- a) Printing, Mailing and Filing FPLAN-EA. The Contractor will provide an electronic copy of the approved FPLAN-EA and five (5) printed copies of the FPLAN-EA to NRCS.

Task 18: Draft Finding of No Significant Impact (FONSI) and Issue Availability Notice Locally. The Contractor shall prepare a preliminary draft and final draft FONSI as well as its NOA for publication locally. The Contractor's responsibilities for the publication and distribution of this NOA shall be the same as for the NOA for the FPLAN-EA. The NRCS will prepare the final FONSI and be responsible for the publication of its notice of availability locally.

Task 19: Maintain and Provide Administrative Record. The Contractor shall prepare and assemble the Administrative Record and furnish it to NRCS after the FONSI is signed. The Administrative Record is the entirety of the information relied upon to prepare the PLAN-EA. The Administrative Record is inclusive of all information and analyses either generated or obtained from other sources, or used to support documentation and analyses. A complete Administrative Record is the entirety of the information relied upon within the Contractor's possession plus all information in other locations listed in the references. Information listed in the references at other locations does not have to be included. The Contractor shall organize the information composing the

Administrative Record as an accessible file, indexed by topic to the extent possible, and submit this record to NRCS.

Task 20: Prepare and Manage Schedule for PLAN-EA. The Contractor, with Sponsor and NRCS assistance, shall develop a specific milestone schedule to complete the PLAN-EA process for this action. The detailed project schedule will be presented by the Contractor within 10 days following the "kickoff" meeting, indicating the critical path(s) of the efforts required to complete the PLAN-EA as outlined in the tasks described above. The schedule will include, at a minimum, the milestones listed in Section VIII of this SOW. The NRCS will approve the schedule or recommend changes within 10 working days of receipt. The project schedule should reflect the NRCS goal to complete the FPLAN-EA document as soon as reasonably possible, with a target goal for filing the Draft PLAN-EA by **December 15, 2018 (to be confirmed)**. This schedule will be used by the Contractor to manage work on the PLAN-EA and by the Sponsor and NRCS to monitor the progress of work on a monthly basis. The schedule will also include specific dates that demonstrate when milestones will be met. A copy of the schedule, with any revisions or updates, and status of the project milestones will be presented in the monthly progress reports.

Task 21: Prepare Monthly Progress Reports. The Contractor will be required to prepare and submit brief monthly progress reports on the status of the PLAN-EA to the NRCS's Contracting Officer. The monthly reports shall contain an accurate, up-to-date account of all major work accomplishments and outstanding issues. The report will include a list of remaining milestones to be accomplished. Completion of work will be documented in these progress reports. The first monthly progress report will be due one month after notice to proceed is given to the Contractor. Subsequent monthly progress reports will be due by the 15th of each month.

Task 22: Attend Unscheduled Meetings. The Sponsor and NRCS reserve the right to request unscheduled meetings with the Contractor to review and discuss the progress and to discuss any problems or concerns that may arise. The Contractor may also request meetings with the Sponsor and NRCS. Dates and locations for these meetings shall be mutually agreed upon as necessary. It is anticipated that an estimated four (4) unscheduled meetings, to be attended by the Contractor's project manager, would involve travel to the Sponsor's or NRCS's office or a similar distance for meeting with cooperating agencies or other organizations. Unscheduled meetings involving travel would be limited to the Contractor's project manager, unless approved by NRCS.

VIII. BACKGROUND WORK

a. Data. The Contractor will use existing data except for specific studies as needed to evaluate alternatives proposed in the Plan-EA/Design. The NRCS and Sponsor will furnish available project related information for the proposed alternative. The Contractor will use the information/data furnished to prepare the Description of the Proposed Alternative report. The Contractor shall assemble and review existing data describing the environmental resources, environmental conditions, historic and archeological properties, economy, and social structure of the areas to be potentially impacted. The Contractor shall use existing information from governmental agencies to the maximum extent possible. The information assembled must be sufficient to assess the environmental, historic, economic, and social values that will be affected, either beneficially or adversely, by the proposed alternative. Throughout this process, pertinent data gaps that have a bearing on the analyses shall be reported to the Sponsor and NRCS immediately upon identification.

To establish the data for the PDPLAN-EA, the following services are required at a minimum:

(1) Materials. The Contractor will obtain materials including existing aerial photos, maps, documents, reports and correspondence, and lists of contacts.

(2) Agency Communications. The Contractor will establish communications with all activities or agencies who will be expected to either participate in this PLAN-EA process or be consulted about it such as, U.S. Fish and Wildlife Service (USFWS), Environmental Protection Agency (EPA), Natural Resources Conservation

Service (NRCS), and other appropriate Federal, State and local agencies. The NRCS shall be informed of all concerns communicated by these agencies.

(3) Site Visits/Field Surveys. The Contractor shall conduct visits to the potentially impacted local areas, with a multi-disciplinary team, to become knowledgeable about the proposed alternative, obtain information, conduct interviews, and analyze impacts. Field surveys will be limited to gathering existing data required to complete analyses of project impacts. The Contractor will identify any data deficiencies that could require additional field research. If any specific, additional field surveys, research, or testing (i.e. geotechnical) is required and agreed to by NRCS, a modification to the contract will be made and an equitable adjustment in the contract price will be negotiated.

(4) Economic Impact Analyses. The Contractor shall, in coordination with the Utah NRCS State economist (or representative), perform regional economic impact analyses of the proposed alternative using accepted analysis techniques. Socioeconomic setting data will be gathered from existing sources. A qualified economist familiar with analysis as outlined in the "Economic & Environmental Principals and Guidelines for Water and Related Land Resource" (P&G) shall be used to adequately analyze the proposed alternatives in the Plan-EA.

(5) Cultural Resources. In implementing as part of this PLAN-EA process the Advisory Council on Historic Preservation's regulations entitled, Protection of Historic Properties, and found at 36 CFR Part 800, the Contractor will, in coordination with the Utah NRCS State Archeologist, review current historic property documents provided by the NRCS and the cooperating agencies. The Contractor shall also request documents from the State Historic Preservation Officer and relevant academic and local area sources. Relevant information from these documents must be included in the cultural resource sections of the PDPLAN-EA. These documents can include local or regional histories, archeological surveys, historic architectural inventories, cultural resource management plans, agreements, etc. All maps of any cultural resource sites that will be included in the PLAN-EA will be provided by the Contractor at a scale such that specific sites cannot be easily found and the resources thereby protected.

(6) Wetlands. For the purpose of implementing and documenting the requirements of the Executive Order on Wetland Protection within this SOW, the Contractor shall use existing information and data from traditional sources such as the U.S. Fish and Wildlife Service, U. S. Army Corps of Engineers, Natural Resource Conservation Service, and State water resource agencies. Based upon information provided, maps and other descriptive information will be adapted by the Contractor and included in the PDPLAN-EA in order to support the analysis of the extent, amount and importance of any wetlands to be impacted by the proposed alternative.

(7) Threatened/Endangered Species. For the purpose of implementing and documenting the consultation procedures under Section 7 of the Endangered Species Act, the Contractor will coordinate with NRCS and the U.S. Fish and Wildlife Service (USFWS), when appropriate, to determine possible impacts to (i) any threatened or endangered species that are either so listed or proposed (ii) candidate species, and (iii) listed or proposed critical habitat. Coordination with the NRCS, USFWS, and the State game and fish management agencies, as appropriate, will be documented. Potential impacts to State listed species must also be addressed in the PDPLAN-EA. Field surveys for protected species occurrence within the study areas are not included in this scope of work. Should the NRCS conclude that sufficient baseline data are not available to adequately address potentially impacted areas, a modification to the contract will be negotiated to include an equitable adjustment in the contract price.

(8) Environmental Justice. The Contractor will obtain information on the presence of Indian Tribes, other minority populations and low income populations in the project area as part of the regional economic analyses. If initial studies indicate that a target population(s) is located within a geographic area to be impacted by the proposed alternative, per the previously referenced guidance on implementing Executive Order 12898, specific proactive steps must be implemented in order to include the identified target population(s) in the public participation plan. Should these proactive steps reasonably exceed the above referenced requirements for the public participation plan, a modification to the contract will be made and an equitable adjustment in the contract price will be negotiated. As described in Executive Order 12898, the potential or absence of effects of the proposed alternative on minority and

low income target populations will be specifically addressed in the Environmental Consequences section of the PDPLAN-EA.

(9) Existing Environmental Pollution, Hazards, and Other Health and Safety Risks. The Contractor will obtain information from the Environmental Protection Agency or equivalent State agencies regarding any existing hazardous conditions at the site of the proposed alternative that may pose health and safety risks to future construction workers, employees, occupants, or general public.

(10) Floodplains. For the purpose of implementing and documenting the requirements of the Executive Order on Floodplain Management within this SOW, the Contractor shall use existing information and data from the Federal Emergency Management Administration with proposed alternative sources being the U. S. Army Corps of Engineers, State water resources agency, or a region specific agency with special expertise. Based upon the information provided, maps and other descriptive information will be adapted by the Contractor and included in the PDPLAN-EA to support the analysis of the extent, amount, and importance of any floodplains to be impacted by the proposed alternative.

(11) Noise and Light. Existing data will be reviewed as well as literature examined to evaluate the potential noise and light impacts of the proposed alternative. The NRCS and the Sponsor will provide relevant data, if available, from similar operating facilities. The Contractor will address the projected changes of noise and light levels that will be generated by the proposed alternative, especially with respect to any sensitive receptors.

(12) Mitigation. During the course of performing the analyses and evaluations required to complete the PLAN-EA, the Contractor shall notify the NRCS immediately of the identification of any potentially adverse impacts that could require the implementation of a mitigation measure(s) and the potential need for the development of an Environmental Impact Statement. The Contractor shall recommend to the NRCS appropriate measures that would avoid or mitigate any adverse impacts which might be identified. Development of appropriate mitigation measures will be accomplished by the Contractor with the approval of the NRCS and included in the PLAN-EA. All approved mitigation measures shall be discussed in a separate section of the PLAN-EA.

(13) Maps. The Contractor must obtain and/or adapt appropriate existing land use maps for inclusion in the PDPLAN-EA showing the location of study area boundaries and environmentally sensitive areas that may be affected by the proposed alternative. These maps shall include, but not be limited to, wetlands, cultural resource sites, endangered/threatened species habitat (State and Federal), floodplains and waterways, important farmlands, severely eroded or erodible sites, and any sensitive natural areas. Maps will be adapted to assure that a balanced or equivalent presentation of information is shown throughout the document for each resource area. A map(s) displaying the regional and site locations of the proposed alternative must also be included in the PDPLAN-EA.

IX. SCHEDULE

- a. The CONTRACTOR shall develop a detailed schedule (*timely delivery of product is a critical component of selection*), based upon the following milestones within 10 days of the notice to proceed (NTP) under this delivery order. The schedule will be submitted to the NRCS for approval. Elapsed days will be measured in calendar days from date of the NTP. At a minimum, specific milestones will include:

Item	Description of Milestone
1	Notice to Proceed
2	Kickoff Meeting
3	Public Participation Plan
4	Public Scoping Meeting(s)
5	Scoping Report
6	Draft Description of Proposed Alternative

7	Description of Proposed Alternative
8	Preliminary Draft PLAN-EA (Submittal No. 1)
9	PDPLAN-EA Progress Review Meeting
10	Preliminary Draft PLAN-EA (Submittal No.2)
11	Draft Notice of Availability for Draft PLAN-EA
12	Electronic copies of Draft PLAN-EA
13	File Draft PLAN-EA
14	Public Meeting(s) for Draft PLAN-EA
15	Draft Responses to Comments on Draft PLAN-EA
16	Progress Review Meeting to Finalize Responses to DPLAN-EA
17	Preliminary Final PLAN-EA
18	Draft Notice of Availability for Final PLAN-EA
19	Electronic copies of Final PLAN-EA
20	File Final PLAN-EA
21	Response to FPLAN-EA Comments
22	Draft FONSI
23	PLAN-EA Administrative Record

- b. Should implementation of a subsequent phase be delayed, or document review times by the NRCS (State & National Water Management Center) take longer than expected, the entire schedule of events may be shifted or extended. The Contractor will be advised as soon as possible upon any delay or change in review time.

X. SUBMITTALS

- a. All submittals under this delivery order shall be sent by a letter of transmittal, identifying the contents of the submission and the review period specified by the statement of work. Work will not be considered officially submitted until it has been received by the NRCS. The Contractor shall allow for sufficient mailing time for submittals to be received by the required date.

- b. List of Submittals:

Item	Description of Submittal
1	Detailed Project Schedule
2	Public Participation Plan to Include Mailing Lists
3	Draft News Releases and Public Notice for Public Scoping Meeting(s)
4	Summary Scoping Report -- and Transcript
5	Description of Proposed Alternative
6	Preliminary Draft PLAN-EA (PDPLAN-EA) Submittal No. 1

7	Preliminary Draft PLAN-EA (PDPLAN-EA) Submittal No. 2
8	Electronic copies of Draft PLAN-EA – original and 5 printed copies
9	Draft Notice of Availability (NOA) and news releases for Draft PLAN-EA
10	Summary Report of Public Meeting(s) and Transcript
11	Preliminary Draft Comment and Responses
12	Preliminary FPLAN-EA (PFPLAN-EA)
13	Draft NOA [and news release] for Final PLAN-EA
14	Electronic copies of Final PLAN-EA -original and five (5) printed copies
15	Draft Notice of Availability (NOA) and news releases for Final EIS
16	Draft and Final Formatted Responses to FEIS Comments
17	Draft Finding of No Significant Impact
18	Administrative Record for the FPLAN-EA
19	Monthly Progress Reports, due the 15 th of each month
20	Memoranda of All Meetings

NRCS AND SPONSOR PROVIDED ASSISTANCE

- a. The following materials shall be furnished by NRCS and/or the Sponsor.
1. Contacts for further definition of proposed alternative/s.
 2. Available appropriate maps and photographs. The Contractor shall be responsible for editing and reformatting these maps and/or production of new illustrations as appropriate, for incorporation into the PDPLAN-EA and PFPLAN-EA documents
 3. Assistance in developing a list of interested entities for Contractor's development of mailing lists.
 4. Any studies, reports, or documents in the possession of the NRCS or the Sponsor that may be useful to the Contractor in developing the "Affected Environment" section of the PLAN-EA (see Section IV-a for a partial listing of useful documents).
 5. Available electronic Files.
- b. NRCS in coordination with the Sponsor will provide consistency guidance throughout the process and certify that the document complies with the requirements of this SOW. Failure of the Sponsor and NRCS to provide this assistance according to the agreed upon schedule may result in a modification to the contract in order to meet the required completion date and/or an equitable adjustment in the contract price.
- c. The following is a list of potential NRCS reference materials that may be required for execution of the work. Most of these reference materials are available on the NRCS Website. The address for these documents is: <http://directives.sc.egov.usda.gov/default.aspx>. The CO will furnish the NRCS reference materials not available on the NRCS Website upon request from the Contractor.
1. NRCS National Watershed Program Manual, 4th edition, April 2014, as amended January 2015.

- Link: <https://directives.sc.egov.usda.gov/viewDirective.aspx?hid=36702>
2. NRCS National Watershed Program Handbook, 2nd edition, April 2014.
Link: <https://directives.sc.egov.usda.gov/viewerFS.aspx?hid=35135>
 3. NRCS National Environmental Compliance Handbook
Link: <https://directives.sc.egov.usda.gov/viewDirective.aspx?hid=39467>
 4. Principles and Requirements for Federal Investments in Water Resources, March 2013.
Link: https://obamawhitehouse.archives.gov/sites/default/files/final_principles_and_requirements_march_2013.pdf
https://www.ocio.usda.gov/sites/default/files/docs/2012/DR9500-013_final.htm
 5. NRCS Natural Resources Economics Handbook, Part 611, Water Resources Handbook for Economics
Link: <https://directives.sc.egov.usda.gov/viewDirective.aspx?hid=28581>
 6. NRCS National Engineering Manual (NEM).
Link: <https://directives.sc.egov.usda.gov/ViewRollUp.aspx?hid=27418&sf=1>
 7. NRCS National Operations and Maintenance Manual.
Link: <https://directives.sc.egov.usda.gov/ViewRollUp.aspx?hid=17127&sf=1>

XI. DOCUMENT FOCUS

The Contractor shall document the affected baseline and conduct appropriate impact analyses in such a manner as to:

- 1) Sharply focus the document on relevant issues. Do not include repetitious statements.
- 2) Include only data which support the analyses. All other data are extraneous. If not needed for analysis, do not include the data.
- 3) Clearly support the analysis with baseline data. Conclusive statements in the consequences section without basis in the affected environment section are unacceptable.
- 4) Fully describe the proposed alternative sufficient for a NEPA analysis.
- 5) Follow all prescribed NEPA procedures, in compliance with laws, regulations and published policies.

XII. MISCELLANEOUS REQUIREMENTS

- a. Labor, Equipment, Materials. The Contractor shall furnish all labor, materials, plant equipment, and transportation to perform the work and services described above. All documents, maps, photos, graphics, mailing lists, etc., shall become Federal property upon acceptance.
- b. Release of Data. All data, reports, and materials contained or developed in this project shall not be released without written approval of the NRCS.
- c. Meeting Memoranda. The Contractor shall furnish the NRCS a memorandum of each meeting held, summarizing any agreements or decisions reached. All memoranda shall be provided within five (5) work days of the meeting.
- d. All documents shall be printed on recycled paper, front and back, unless specified otherwise.
- e. The DPLAN-EA, FPLAN-EA, and mailing lists shall be saved in (at least) Microsoft Word 2007 and Adobe 9 electronic format and provided to the NRCS.

XIII. CONTRACT ADMINISTRATION

The Contractor shall notify its appropriate employees of the individual designated as the NRCS's Contracting Officer for this SOW.

Additionally, the following individuals will comprise the minimum mailing list for this contract.

- a. () will be the CO on this task order and may be reached at (801) 524-4592 or [@.gov](#)
The mailing address for () is:
- b. **Mr. Bronson Smart**, P.E., will be the COTR on this task order and may be reached at (801) 524-4559 or Bronson.Smart@ut.usda.gov The mailing address for Mr. Smart is: USDA-NRCS, Wallace F. Federal Building, 125 South State Street Room 4402, Salt Lake City, UT, 84138

NOTE: Only the CO may authorize changes to this task order.

Engineering Design Statement of Work

For the
Santaquin Watershed
Utah County, Utah

NRCS is requesting engineering design assistance to perform all tasks necessary in accordance with the following Statement of Work to plan, design, and prepare construction drawings and specifications for the Santaquin Watershed, Utah County, Utah.

Objective: Engineering design is to provide structural improvements having the quality and durability required for the economic life of a structure at the least total cost consistent with functional requirements. Engineering designs are to be determined by comparative design studies and cost estimates prepared with full consideration of the landscape, topography, foundation, and other site conditions including environmental quality, and the economy and feasibility of construction, operation, and maintenance. Economic comparisons of alternative designs are to be determined by the amortized average annual cost of installation (including costs of landrights), operation, and maintenance. Environmental comparisons are to consider ecological, cultural, and aesthetic values.

NRCS will complete the following tasks as it relates to completion of the Engineering Design:

1. Analyses necessary to determine the correct dam hazard classification
2. Provide any available as-built design data, drawings, and any current completed investigation analysis results as it pertains to the selected watershed study area.
3. Provide all data and documentation, as available, used for completion of the Environmental Document (Plan/EA/EIS) and selection of the proposed alternative as documented in the Final Plan-EA/EIS.

The selected Planning-Engineering Contractor shall perform the following tasks-where needed:

1. Analyses to determine the condition and functionality of the principal spillway system under seismic loading.
2. Evaluation of the condition of the embankment and foundation.
3. Analyses to determine the condition and functionality of the auxiliary spillway system alternatives.
4. Preparation of a complete analysis of costs, impacts and benefits of all alternatives.
5. Development of a Land Rights Work Map for the selected alternative.
6. Development of an updated Emergency Action Plan template for the sponsors to complete.
7. Other agreed-to tasks.

After the review and approval of the design recommendations by NRCS, the Contractor will complete construction drawings and specifications. Any proposed changes in release rates, dimensions, or elevations will be in conformance with the final Watershed Plan/EA or EIS document, and will be documented in the Design Engineers Report, and approved in writing by NRCS.

Work submitted by the CONTRACTOR to NRCS for review will be discussed at conferences scheduled for that purpose. CONTRACTOR will notify NRCS at least seven (7) calendar days in advance of the time for each conference. When such conferences are held, CONTRACTOR will prepare notes summarizing discussions and decisions reached and, within ten (10) calendar days following the conference, submit one (1) electronic copy of the notes via email to the NRCS Project Manager and Administrative Contact.

Liaison with NRCS is the responsibility of the CONTRACTOR to ensure NRCS concurs in the selection of alternate designs, alternate appurtenances, or other matters affecting the development of general or specific elements of the design. The CONTRACTOR will submit a memorandum that includes a full presentation of pertinent facts and copies of computations, sketches, notes, and drawings that are necessary for NRCS to perform a complete review of the proposal. Such memoranda will be incorporated into the design report.

ENGINEERING CONTRACTOR - STATEMENT OF WORK

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1 **General**

- 1.1 NRCS will transmit all documentation used for completion of the specific Authorized PL566 Watershed Plan. The document will contain the approved/proposed alternative developed as per NRCS policy. The proposed alternative will be used to determine any further analysis required to produce a Final Engineering Design Report for the proposed measures documented in the Final Plan-EA/EIS.
- 1.2 The Contractor will designate a project manager and he/she will be fully aware of the requirements of this Statement of Work, submitted by the Contractor and incorporated into the agreement, including the budget and work schedule. Liaison with NRCS is the responsibility of the Contractor to ensure that NRCS is aware of and concurs with the progress of the study, formulation and selection of alternatives, and other matters concerning the development of the plan and environmental document.
- 1.3 The Contractor will maintain a record of all notices, computations, drawings, and other pertinent data developed for the work. Assumptions made shall be clearly stated, and all sources of reference data will be included in project record. This record will be neatly recorded, indexed, and organized into a technical report or set of planning folders. The technical report or planning folders can be provided as electronic files or as paper files in topical folders to the NRCS Project Manager.
- 1.4 The Contractor is responsible for obtaining permission to enter all private lands to conduct resource inventories, gather data, conduct engineering or cultural resource surveys, conduct geologic investigations, or for any other project related reason. Within the sponsor's permanent easement or land rights, the Contractor as a representative of the NRCS and, therefore, of the local watershed sponsor(s) has permission to enter onto the existing land rights and complete all needed work. Outside the sponsor's permanent easement, the Contractor, assisted by the local watershed sponsor, will document permission using a simple, signed agreement and will file them in the planning folders.
- 1.5 NRCS will furnish or make available to the Contractor the technical reference material listed in Appendix I and, in addition, will furnish the following project specific data. The following listed material shall be returned to NRCS at the completion of the contract except those materials provided on CD-ROM. The Contractor will follow all pertinent regulations pertaining to dams. The Contractor is also responsible for obtaining all needed non-NRCS computer programs along with the program's documentation (i.e. US Army Corps of Engineers HEC-RAS and HEC FDA programs).
 - Watershed Agreement
 - Supplemental Watershed Agreement(s)
 - Watershed Plan
 - Supplemental Watershed Plan(s)
 - Environmental Impact Statement or Environmental Assessment
 - Land Rights Map
 - As-Built drawings
 - Existing NRCS survey data
 - Existing NRCS maps
 - Existing geology reports
 - Existing soil index testing data
 - Existing soil mechanics testing

- Existing design material
- Existing investigation reports
- Existing biological opinions and site inventories
- Existing cultural resource surveys, sampling or recovery reports

2 **Quality Control Plan**

- 2.1 The Contractor shall coordinate with NRCS staff to submit a Quality Control Plan (QCP). The QCP will:
- Describe procedures that will be implemented by the Contractor to assure quality control;
 - Include an explanation of the responsibilities of each member of the Contractor's design staff and review team;
 - The Contractor shall assure the professional qualifications of contractors whose services the Contractor will procure.
- 2.2 The QCP shall be submitted to NRCS for review and approval as an initial item of work. The Contractor is responsible for ensuring that product development and independent technical review for the design and specifications are carried out in accordance with the approved QCP. The QCP will be updated as needed.

3 **Meetings**

- 3.1 The Contractor shall attend meetings with the project sponsors and others as necessary during the design/planning effort to gather and impart information.
- 3.2 Formal public meetings are meetings held expressly for the NRCS planning effort. Such meetings will be hosted by the project sponsor(s) but will require the Contractor's discipline leader's attendance to explain any design alternatives for the project and documentation of input from the public.
- 3.3 Normally, NRCS will keep sponsors updated on project progress during the sponsor's routine monthly meetings. However, periodically one or more of the Contractor staff will need to attend these meetings to update the sponsor or to collect specific information from the sponsor's governing board.
- 3.4 Travel costs for these meetings will be estimated and included in the Contractor budget.

4 **Field Surveys**

- 4.1 The Contractor shall utilize existing NRCS surveys where appropriate (LiDAR) or perform such measurements and ground surveys as may be required to complete planning of this project. This may require establishing centerlines, developing topographic information, collecting profiles and cross-sections for various lines and structures, and furnishing documentation of the field surveys in the form of electronic media and notes. All survey notes shall follow the format of good surveying practice.
- 4.2 **Accuracy and Precision.**
- 4.2.1 All measurements and ground surveys shall be located with Universal Transverse Mercator (UTM) coordinates. Benchmarks shall be on the North American Datum 1983 (NAD 83) for horizontal and North American Vertical Datum 1988 (NAVD 88) for vertical unless otherwise approved by NRCS.
- 4.2.2 The Contractor may use a traditional transit field survey methods or photogrammetry to compile any required survey data.

- 4.2.3 The Contractor shall be responsible to do checks to see that all errors of closure and tolerances are met. NRCS will be free to spot-check any or all information provided to determine compliance with the requirements.

4.3 Permanent Control Points.

- 4.3.1 A permanent brass cap in concrete or other permanent bench mark shall be used and tied into all surveys carried out in this contract.
- 4.3.2 The location, description, and elevation of this bench mark shall be accurately recorded in the notes and described in relation to fixed landscape features.

4.4 Deliverables.

- 4.4.1 An electronic or paper copy of all survey notes shall be furnished. Electronic files shall be in PDF or Microsoft Office format.
- 4.4.2 An electronic or paper copy of all maps and drawings shall be furnished. Electronic files shall be in AutoCAD DWG or ASCII DXF or ArcGIS format. AutoCAD DWG files shall be purged to remove unused blocks and drawing objects. A layer table or legend (defining layer names and layer contents, such as contours, trees, roads, etc.) shall be provided. So that exact duplicates can be produced, AutoCAD files shall contain a named view and paper space for each map or drawing and ArcGIS files shall contain a View and Layout for each map or drawing, s. DEM, TIN or TNN data shall be on a separate drawing layer in the AutoCAD DWG file or supplied as a separate AutoCAD DWG or ArcGIS format file.
- 4.4.3 Point data, such as the locations of survey control points, spot elevation, drill holes, excavations, etc., shall be provided in a comma-delimited text file using a point-north-east-elevation-description (PNEZD) format.
- 4.4.4 The electronic files shall be supplied on a CD or DVD.

5 Hydrology and Hydraulics

- 5.1 The work shall consist of all operations needed to complete the hydrologic and hydraulic analyses presented in the approved Plan of Work and shall include the following determine the hazard classification for the dam, hydrologic analyses, hydraulic analyses, prepare flood plain maps, and develop breach flood inundation map or Emergency Evaluation Plans.
- 5.2 The Contractor, in coordination with NRCS, shall review the site data provided for accuracy and completeness and shall determine if hydrologic and hydraulic analyses are needed to complete the planning of this project.
- 5.3 The Contractor will evaluate the hydraulics using the projected future conditions for all alternatives or plans.

5.4 Hazard Classification

- 5.4.1 The hazard classification shall conform to the policies outlined in the National Engineering Manual parts 520.23, 520.27 and 520.28 and TR-60 as well as requirements of the Utah Office of the State Engineer, Dam Safety. Note: Design criteria can be based on Hazard Classification.
- 5.4.2 The breach discharge and mapping shall be developed using procedures in TR-60.
- 5.4.3 The hazard classification shall consider the impact of future development within the breach inundation flood plain.

5.5 Hydrology and Hydraulics Analyses

- 5.5.1 This work shall consist of developing inflow hydrographs, outflow hydrographs hydraulic stream routing and hydraulic routing and proportioning of the dam, and a hydrology and hydraulics report.
- 5.5.2 As a minimum and using WinTR-20 or SITES, the Contractor shall review inflow hydrographs for the 2-, 5-, 10-, 25-, 50-, and 100-year 24-hour storms; the 100-year 10-day storm, the stability design storm, and the freeboard storm. *(With and without scenarios for the NED)*
- 5.5.3 For basin capacity calculations, a Sediment Survey and volume calculations shall be completed. The Contractor Project Geologist/Hydrologist and/or Soil Mechanics Engineer will review the sediment yield to the basin under projected future conditions.
- 5.5.4 Procedures and criteria in TR-60 shall be the minimum acceptable for proportioning the earthen dam and associated spillways.
- 5.5.5 Using TR-20 or SITES, the inflow hydrographs shall be routed through the planned or existing dam and downstream through the study area. This will provide outflow hydrographs and stream routing downstream of the dam. Uncontrolled drainage areas downstream of the dam shall be included in the analyses.
- 5.5.6 Water surface profiles for the routed storms shall be completed using HEC-RAS and the hydrology and hydraulic models with sensitivity analysis shall be run through several iterations so that the models provide consistent results. The breach hydrograph shall be developed using procedures in TR-66 and shall be routed downstream using the HEC-RAS model. This routing shall extend from the dam to the downstream cross section where flood plain of the breach hydrograph is equivalent to the flood plain of the 100-year, 24 hour storm. If development exists downstream from this location and is below the 100-year flood level, the routing must be extended until the depth and velocity of flood water from the breach hydrograph no longer creates a loss of life hazard or property as indicated in TR-60.
- 5.5.7 The hydrology and hydraulics report shall be a narrative summary of all procedures and assumptions. Alternative analyses runs shall be summarized in the report. Supporting data and inputs must be provided to NRCS. Consideration of pertinent stream gages will be utilized to determine appropriate Time of Concentrations and Runoff Curve Numbers.
- 5.5.8 Electronic data files will be cleaned or purged so that only final input, output and associated files are delivered to the NRCS. Electronic data files for final alternative analyses will also be delivered. The electronic data files shall be delivered on DVD.

5.6 Flood Plain and Breach Inundation Maps

- 5.6.1 For the recommended alternative, flood plain mapping downstream of the dam shall be developed for eight 24-hour storm events (2, 5, 10, 25, 50, 100, 200, 500 year events) and shall show the plan or aerial view only.
- 5.6.2 The breach inundation map delineates the area affected by a catastrophic failure of the dam and shall show the following flood plains: Freeboard hydrograph, Breach hydrograph and 100-year, 24-hour hydrograph. The map shall provide an aerial view and profile with water surfaces shown.
- 5.6.3 The flood plain mapping shall be plotted with an orthophoto base at a maximum scale of 1:4,800 (1" = 400'). Flood plain mapping shall be in an AutoCAD DWG or ASCII DXF format on CD-ROM.

5.7 Deliverables

- 5.7.1 An electronic or paper copy of the hazard classification memorandum shall be furnished. Electronic files shall be in PDF or Microsoft Office format.
- 5.7.2 The hydrology and hydraulics report shall be furnished. Electronic files shall be in PDF or Microsoft Office format.
- 5.7.3 Electronic copies of all data and modeling files shall be furnished in their native format. If software, other than NRCS programs, Microsoft Office, AutoCAD, ArcGIS, is needed to use, display, or evaluate the data files, the Contractor shall provide the needed software. The Contractor will discuss any such needed software with NRCS during development of the Plan of Work so that arrangements for NRCS purchases of copyrighted software can be made.
- 5.7.4 An electronic or paper copy of the flood plain and breach inundation maps.
- 5.7.5 The electronic files shall be supplied on a DVD.

6 Geologic Investigations

- 6.1 The work shall consist of all operations as necessary to complete the geologic investigation of a dam or other similar structure where there is a need in order to develop a combined Plan-NEPA document and to complete the approved Design Plan of Work.
- 6.2 The Contractor shall review the site data provided and shall determine if geologic investigations are needed to complete the planning of this project and shall incorporate needed work into the approved Plan of Work.
- 6.3 The Contractor's geologist shall have previous experience in the geological investigation of dams and spillways. The project geologist shall meet the minimum requirements outlined in NEM Part 531, Geology.
- 6.4 The geologist shall develop an investigation plan and submit it to NRCS, who will review, suggest changes, discuss those suggestions to resolution and approve within 5 working days.
- 6.5 NRCS requirements for geologic investigation and sampling are stipulated in the NEM Part 531 and Geology Note 5, dated 1991. Additional requirements are contained in TR-60 and NEH Section 8. Refer to Appendix IV for NRCS geotechnical terms and preferences.
- 6.6 The geologist shall log all test holes, rock cores, rock outcrops, and excavations and shall direct the investigation in the field.
- 6.7 When 75 percent of the work at a site has been completed or at least ten days prior to the anticipated completion of the investigation, the geologist shall notify the NRCS geologist, and they will schedule a field review. The field review will discuss progress, review the recorded logs and sampling, and agree on remaining work to complete the investigation.

7 Subsurface Investigations

- 7.1 This phase of the work shall consist of performing subsurface investigations, field testing, and obtaining samples for laboratory testing in accordance with American Standard Testing & Materials (ASTM) D 420 as necessary to provide data adequate to serve as a basis for design of the project works. Such field testing shall include testing for dispersive clays and collapsible soils.

8 Plan of Investigation

- 8.1 Not less than 5 working days prior to the start of detailed subsurface investigations, the Contractor shall meet with NRCS and present a Preliminary Plan of Investigation. The preliminary plan of investigation shall include the plan of operations proposed for accomplishing the work and shall be based on consideration of all available data, a physical reconnaissance of the site and other investigations as the Contractor may deem appropriate.
- 8.2 The preliminary plan of investigation must be of such scope as to show clearly that the work may be effectively accomplished in accordance with the requirements of the contract. The preliminary plan of investigation shall include, but not be necessarily limited to: a preliminary drawing of the site showing the location of each of the site components; the proposed location and depth of drill holes and/or excavations; the proposed location and depths of field tests; the proposed location and depths of disturbed and undisturbed samples; the personnel to accomplish the work; the equipment to be used in accomplishing the work; and the schedule proposed for carrying out the work within the allotted performance time.
- 8.3 Soil sampling methods shall conform to the requirements of the applicable ASTM methods. Soils shall be identified and classified by means of the Unified Soil Classification System as prescribed in ASTM D 2487 and D 2488.

9 Site Preparation

- 9.1 Site preparation shall consist of preparing drill rig travel ways, stream crossings, and drill rig setup locations on abutments and flood plains and the removal of trees and brush. It shall also include replacement of excavated material where feasible. All dozer operations shall be conducted in such a manner as to produce a minimum amount of erosion and to prevent sediment and other pollutants from entering nearby lakes, waterways or streams. The location of stream crossing shall be as shown on the site map. Moving equipment to the site(s) is considered mobilization.

10 Foundation Investigations

- 10.1 Sufficient borings will be made in the foundation to accurately delineate and describe foundation materials and conditions to a sufficient depth where materials and/or conditions will have no adverse effect on the stability and performance of the structure from the standpoint of strength, consolidation, or seepage.
- 10.2 Undisturbed samples of representative and critical materials encountered in the foundation will be collected and tested. Undisturbed samples will be approximately 5" in diameter or larger unless smaller sized samples are approved by NRCS. Cohesive soils too soft to be recovered with a Shelby tube type sampler shall be secured with a piston type sampler or equivalent. All undisturbed samples shall be handled, preserved, packed and transported in a manner that will prevent changes in moisture content (except for the removal of free water) or physical condition between the time they are collected from the foundation and delivered to the testing facility.
- 10.3 Standard penetration tests shall be performed in accordance with ASTM D 1586 in representative foundation borings. In uniform soils, penetration tests may be performed at depth intervals not exceeding five (5) feet. In non-uniform soil deposits, penetration tests shall be performed continuously from the surface to a depth equal to the height of the dam and at

intervals not exceeding five (5) feet below this depth until blow counts of 30 in cohesive soils and 50 in non-cohesive soils are encountered. The depth investigated need not exceed three (3) times the height of the dam. Standard penetration tests shall not be applicable to cohesive materials which are not at or near saturation and to materials which contain 10% or more gravel.

11 Borrow Area Investigations

- 11.1 Borrow areas may not be shown on the maps provided. If borrow areas are not shown or if the designated areas do not provide sufficient usable borrow, the Contractor and NRCS shall jointly locate and secure an appropriate borrow area. Borrow areas shall be explored and representative samples recovered. The volume of borrow (including auxiliary spillway excavation if applicable) shall be "proved out" by exploration and shall exceed the estimated required volume by at least 30 percent. When making computations of borrow material available, excavated side slopes of 4:1 shall be used.
 - 11.2 Materials to be excavated from the auxiliary spillway shall be fully described and classified as to methods required for excavation and shall be sampled and tested for use as earth or rock embankment materials.
 - 11.3 Excavated materials to be used in the embankment that contain more than 5% larger than No. 4 sieve will be sampled and tested according to Technical Release Numbers 26 and 27. Samples representing each kind of borrow material available for use shall be collected for laboratory testing according to ASTM D 420. For the site investigated, the Contractor shall prepare a sample list itemizing all undisturbed and disturbed samples collected.
 - 11.4 The Contractor shall preserve all drill holes for at least 24 hours to determine whether ground water is present or whether ground water levels have stabilized (two successive readings taken at least one hour apart remain the same). The Contractor shall provide temporary covers, plugs, fences, barricades, lights, markers, or other measures consistent with the hazard involved to prevent injury to humans or livestock.
- 11.5 **Recording of Investigation Results**
- 11.6 A log of each test hole and/or excavation in accordance with ASTM D 5434 shall be recorded. Holes will be numbered in accordance with the following numbering system. Abbreviations used in recording and plotting logs shall be as listed below. The numbering system and abbreviations shall be shown on the drawings. Plan, profile, and cross section views shall be plotted to delineate location of the holes and subsurface conditions. The format and content shall be adequate for the purpose of the investigation in accordance with accepted geologic practice.

TEST HOLE NUMBERING SYSTEM

Hole Locations	Combination Rig	Power Auger	Hand Borings	Trench or Excavations	Natural Outcrops, Streambanks
Centerline of Dam	1 - 49	51 - 99	1001 - 1099	2001 - 2099	3001 - 3099
Borrow Area	101 - 149	151 - 199	1101 - 1199	2101 - 2199	3101 - 3199
Emergency Spillway	201 - 249	251 - 299	1201 - 1299	2201 - 2299	3201 - 3299
Principal Spillway	301 - 349	351 - 399	1301 - 1399	2301 - 2399	3301 - 3399
Stream Channels	401 - 449	451 - 499	1401 - 1499	2401 - 2499	3401 - 3499
Exploratory Borings	501 - 549	551 - 599	1501 - 1599		
Foundation Drain	601 - 649	651 - 699	1601 - 1699	2601 - 2699	3601 - 3699
Miscellaneous	701 - 749	751 - 799	1701 - 1799	2701 - 2799	3701 - 3499

ABBREVIATIONS

B.	Bedded or Bedding	Nod.	Nodule or Nodular
Ch.	Chalk or Chalky	Part.	Partings
Cng.	Conglomerate	Sat.	Saturated
Cs.	Claystone	Str.	Streaks
C.T.	Caved To	Sh.	Shale or Shaly
Flg.	Flagstone or Flaggy	Ss.	Sandstone
Int.	Interbedded	T.	Thin
Lay.	Layer or layers	U.A.D.	Unable to Auger Deeper
Len.	Lens or Lenses	U.D.B.D.	Unable to Drt Barrel Deeper
Ls.	Limestone	U.E.D.	Unable to Excavate Deeper
Ma.	Marl or Marly	Vug.	Vugular
Mat.	Matrix	Wtr.	Water Level as Encountered
Ms.	Siltstone		

12 Borings

- 12.1 Wash borings, probing, fishtail bits, roller bits, flight augers, helical augers, unverified geophysical soundings and other similar borings shall be considered adequate only for determining rough bedrock profiles. Auger borings (except large diameter bucket augers) or small diameter split spoon borings, with or without supplemental geophysical soundings, shall be considered adequate only for determining bedrock profiles or rough soil profiles. Core borings (including push tube and piston samplings) of medium to large diameter, excavations, test trenches, or inspection holes shall be considered adequate for determining detailed profiles. Bucket augers (6" or larger in diameter) shall be considered adequate for detailed profiles of uniform, non-gravelly materials. Large diameter (12" or more) bucket auger borings shall be considered adequate for this purpose in very coarse or very mixed materials. Auger borings shall be drilled so that representative materials from depth intervals not to exceed two (2) feet are recovered for logging.

13 Bedrock Profile

- 13.1 A bedrock profile determined by borings, probing, or soundings shall be verified by means of trenches or large diameter inspection holes at any point or in any zone where the founding of a structural element on rock is critical to the stability or functional integrity of the structure and/or when needed to estimate grouting or dental concreting requirements.

14 Vane Shear Tests

- 14.1 NRCS will require in-situ vane shear tests when saturated, cohesive foundation soils cannot be properly sampled for laboratory testing. Vane shear tests shall be conducted with equipment and methods equivalent to those presented in ASTM D 2573.

15 Permeability Tests

- 15.1 Tests to determine the permeability of foundation materials on site, including bedrock, shall be conducted in drill holes using the appropriate boundary conditions, shape factors, and techniques outlined in National Engineering Handbook, Section 8, or other methods approved by NRCS.

16 Safety

- 16.1 Borings and other excavation (if needed) shall be so excavated, braced, and supported (or cased) as to safeguard the work and the workers and to provide that ground adjacent to the excavation will not slide or settle so as to cause damage to adjacent existing improvements. the Contractor shall furnish, place, and subsequently remove such supporting installations as needed.
- 16.2 When drill holes or other excavations are left open at the end of a day's work or for observation after completion of work, the Contractor shall provide temporary plugs, covers, fences, barricades, lights, markers, or other measures consistent with the hazard involved, to prevent, injury to humans or livestock, and to protect the other installations.

17 Changes in Plan and Completion of Work

- 17.1 During the progress of the investigation, the Contractor shall promptly notify NRCS of any unexpected conditions encountered that would direct a material change in his proposed plan or scope of investigation. In this event, the Contractor will furnish NRCS with copies of a revised plan and scope of investigation for NRCS review.

18 Site Cleanup

- 18.1 Upon completion of the work at each site, the Contractor shall do the following:
- Securely plug all borings and backfill any excavations which are not required for future observations.
 - All borings shall be filled in conformance with Utah state regulations and ASTM D 5299 except for all borings that do not penetrate an aquifer shall be backfilled with drill cuttings from the original drilling. However, when borings are backfilled in this manner, the hole shall

be capped with a rock, metal cover, or other durable, nontoxic material. This cover must overlap the diameter of the boring by at least 3 inches and must be buried at least 2 feet below the ground surface. Above the hole cover, the hole shall be filled with compacted silts and clays. Restore the land surface to the original grades (except for access roads).

- Remove from the site all scrap or abandoned equipment, materials, and supplies of any nature.
- Repair or replace all damaged fences to their original or better condition.
- Surveys necessary to determine the locations and elevations of all test holes (bored or excavated) during the site investigations shall be completed at this time.

19 Seismic Assessment

- 19.1 Contractor will transmit the seismic report to NRCS for engineering design consideration. As part of this investigation, a map is to be prepared showing the location and intensity or magnitude of all intensity V or magnitude 4 or greater earthquakes of record, and any historically active faults, within a one-hundred kilometer radius of the site(s). The 100-kilometer radius may need to be expanded if a large historic earthquake or seismically active zone may affect the dam site. The report shall also summarize other possible earthquake hazards such as ground compaction, landslides, excessive shaking of unconsolidated soils, liquefaction and seiches. The report shall address the seismic criteria in TR-60, NEM Part 531, the current building code or the Utah Office of the State Engineer, whichever is applicable upon review.
- 19.2 Upon completion of the seismic assessment, NRCS may direct additional investigations, explorations or analysis.

20 Geologic Report

- 20.1 Contractor will transmit the Geologic Report to NRCS for engineering design consideration. A detailed geologic report shall be prepared. This report will generally conform to the guidelines in the NEM, Part 531, Geology, and to the example geologic report being furnished as a guide. This report shall include a narrative discussion interpreting the geologic conditions at the site and their possible relation to the suitability of the site and to the design, construction, and operation of the proposed structure. Any anticipated problems likely to result from the geologic conditions, such as foundation weaknesses, seepage problems, difficult excavation, or other problems shall be discussed in the report. Any measures considered necessary to correct adverse conditions or utilize favorable conditions also should be discussed in the report. The data resulting from field or laboratory tests, such as permeability tests or standard penetration tests shall also be reported and interpreted. The results of surface and ground water investigations shall be discussed.
- 20.2 The report shall include recorded logs of investigations and a site geology map using the reservoir topographic map as a base. The map shall show the locations of all excavations, test holes, and drill holes. It shall show the surficial geology, location of bedrock outcrops, springs, seeps, and any other pertinent information. Bedrock contour maps, ground water contour maps, or other illustrations appropriate to the site shall be included as necessary. Plotted profiles and cross section of subsurface conditions shall be furnished and shall include the locations of undisturbed and disturbed samples and field tests. The seismic assessment shall be included as part of the geology report. The geology report shall be prepared and signed by the project

- geologist. If the geologic maps and drawings are generated in electronic form, NRCS shall supply the Contractor with those maps and drawings in both electronic media and hard copy.
- 20.3 Geologic data shall be in AutoCAD, ArcGIS, ASCII DXF, or gINT format .
<http://www.gintsoftware.com/> . The geologic data shall include all borings, excavations, drill holes, baselines, benchmarks, monuments, etc.
- 20.4 A layer table (legend) shall be submitted defining layer names used to describe various components of the drawing, such as contours, trees, roads, etc.
- 20.5 The data files shall be supplied on a CD or DVD.

21 Investigation Report

- 21.1 Contractor shall transmit the Investigation Report to the NRCS. The investigation report shall include preliminary embankment slopes, pool elevations, a zoning plan, and other information required for setting up a testing program, establishing testing pressures, rates, and other items for completing soil tests. The purpose for which samples were obtained, the potential use of the soil represented by the samples, and the expected use for the test results are to be explained.
- 21.2 The zoning plan shall include a drawing of the proposed cross-section of the dam and the quantities of materials, including the auxiliary spillway excavations, represented by the various samples. The drawing shall also show the disposition of the various materials in the zones.
- 21.3 The investigation report shall be signed by the author and shall be attached at the end of the narrative geology report section.

22 Soil Mechanics

- 22.1 The Contractor shall review the site data provided for accuracy and completeness and shall determine if soil mechanics testing and analysis is needed to complete the planning and design of this project. Soil mechanics testing and analysis incorporated into the approved Plan of Work.
- 22.2 The work shall consist of performing soil mechanics and other physiochemical tests adequate to serve as a basis for design and construction control of the structure and appurtenances. The soil testing program shall include both index and complex testing when appropriate. All testing shall be done on samples that represent the range of materials at the site. Testing methods shall be compatible with the type of engineering analysis made and the field conditions that will exist.

23 Testing Plan

- 23.1 The Contractor shall review any existing reports, proposed testing plans, completed testing plans and existing testing results prior to formulating the laboratory testing program for this specification. The Contractor shall submit for review and approval a plan detailing the number and kinds of tests to be performed, the sources of the materials to be tested, and a schedule for completion of the testing program. The plan shall include narrative statements indicating the purpose for making the proposed tests, the proposed use of the test results, and a reference to the delineated materials represented by the samples to be tested.
- 23.2 When the index testing (Ex. grain size, Atterberg limits, specific gravity, compaction, relative density) has been completed and prior to commencing complex testing, the Contractor and

NRCS will review the testing program and results, and agree on remaining needs and testing requirements.

24 Sample Handling

- 24.1 The following conditions apply to all soil samples that are going to be used in the testing:
- 24.2 Samples will be packaged and transported in accordance with ASTM D 4220 or D 5079.
- 24.3 Soil samples shall be inspected prior to testing and their general condition noted. Any unusual conditions shall be reported. Any sample disturbance shall be described and, in the case of tube samples, the amount of wash material, compression, or other distortion shall be measured and reported. Any other information that the testing organization feels is pertinent to the engineering application of the test result shall be reported.
- 24.4 Soil samples shall be tested as soon as possible after they are received by the laboratory in order to reduce storage time and possible disturbance from unnecessary handling. Particular care is to be taken with undisturbed samples to assure that the water content (except for removal of free water) and physical condition does not change prior to testing. If undisturbed samples are to be stored in excess of seven days before testing, they must be removed from the tubes, waxed, and stored in a room with controlled, high humidity.
- 24.5 The laboratory shall visually describe samples and classify each according to the Unified Soil Classification System (ASTM D 2487 or ASTM D 2488). A log of an undisturbed sample shall be made if changes in the character of the soil are noted within the sample. This log shall show the exact location of test samples.

25 Laboratory Testing

- 25.1 All necessary soil tests shall be made on a sufficient number of samples to provide adequate data for design and subsequent construction control.
- 25.2 Soil testing shall be done in accordance with the methods or procedures listed for the following tests. If other procedures are used or other tests are deemed necessary, they shall be those generally accepted by the soil engineering profession and approved by NRCS prior to beginning the test.
- 25.3 Grain Size Analysis of Soils - Method ASTM D 422
- 25.4 Atterberg Limits - Method ASTM D 423 and D 424
- 25.5 Specific Gravity - Method ASTM D 854
- 25.6 Compaction (moisture-density) - Method ASTM D 698
- 25.7 Determine the specific gravity of the soil and develop the complete saturation (zero air voids) curve over the full range of the test.
- 25.8 When ASTM D 698 - Method C is used, the percentages of material between the 2 inch and No. 4 sieve size will not be replaced as specified in Note 2.
- 25.9 When materials are subject to breakdown and degradation when compacted, a separate and new sample will be used for each point on the compaction (ASTM D 698 - Method A -Note 1).
- 25.10 Method ASTM D 1557 shall be used when so designated by NRCS or when requested by the Contractor and approved by NRCS.
- 25.11 Relative Density of Cohesionless Soils - Method ASTM D 204.
- 25.12 Permeability - U.S. Army Corps of Engineers, EM 1110-2-1906, Appendix VII
- 25.13 Dry Unit Weight - U. S. Army Corps of Engineers, EM 1110-2-1906, Appendix II

- 25.14 Consolidation and Permeability - Method ASTM D 2435 or USBR Designation E-15. The minimum sample size shall be 2 1/2 inches in diameter by 1 inch thick.
- 25.15 Foundation samples tested for design will be saturated at the start of the test unless a collapse potential exists. If collapse is suspected, the samples will be loaded normally until the overburden pressure plus the load of the embankment is reached. The sample will then be saturated with the collapse measured and then normal testing can be resumed.
- 25.16 Load increments sufficient to define the preconsolidation pressure of overconsolidated foundation soils will be used.
- 25.17 Load increments will be added to 32,000 psf or until the straight line or virgin portion of the void ratio-pressure curve is obtained.
- 25.18 At least one point will be determined on the unload or rebound portion of the void ratio-pressure curve for foundation samples.
- 25.19 Water content, density, and degree of saturation will be determined both before and after testing. This will require a specific gravity determination.
- 25.20 All consolidation-time curves will be included in the report. Consolidation results will be plotted as void-ratio versus log of pressure. Overburden pressure, preconsolidation pressure (if any), and compression index will be shown on void ratio versus pressure plot for foundation samples. The coefficient of consolidation will be computed and shown.

26 Shear

- 26.1 Triaxial Compression - Procedures described in "Soil Testing for Engineering" by T. William Lambe or "The Triaxial Test" by Bishop and Henke or EM 1110-2-1906 Appendix X.
- 26.2 Direct Shear — Procedures described in "Soil Testing for Engineers" by T. William Lambe or U.S. Army Corps of Engineers EM 1110-2-1906 Appendix IV
- 26.3 Special requirements:
 - 26.3.1 The shear test parameters defined in TR-60 shall be used.
 - 26.3.2 Shear tests on materials with maximum particle sizes less than 3/4" diameter will be triaxial compression tests except for those nonplastic soils that cannot be trimmed or remolded for triaxial testing.
 - 26.3.3 Specimens shall be saturated by back pressuring. A B—parameter (ratio of change in pore pressure to change in stress) of 0.95 or more shall be obtained.
 - 26.3.4 Consolidated-undrained tests at saturation will be made with pore pressure measurement for critical and representative foundation samples.
 - 26.3.5 Consolidated-undrained tests at saturation with pore pressure measurements will be made for critical and representative samples of materials proposed for use in each zone of the embankment. Average placement moisture content may be made on critical and representative samples of materials proposed for use above the fully developed phreatic line in the downstream shell.
 - 26.3.6 Unconsolidated-undrained tests of embankment materials at average placement moisture and of foundation materials at saturation will be made if sampling and testing reveal the presence of foundation strata which necessitates analysis of stability for the end of construction condition. Samples will be tested to failure or to a maximum strain of 15%, whichever occurs first, and the stress-strain curves will be included in the report.

- 26.3.7 The maximum deviator stress will be used as the failure criterion. Failure may not exceed 15% strain.
- 26.3.8 A minimum of three stress circles from three separate specimens shall constitute a shear test.
- 26.3.9 Water content, dry density and degree of saturation shall be determined for each specimen before and after testing.
- 26.3.10 Visual differences between specimens will be noted, and visual failure condition of each specimen also will be noted. Plots of Mohr's circles and the envelope(s) for total stress (and effective stress when measured) will be given in the report.

27 Dispersion

- 27.1 Laboratory Dispersion Test - Procedures described in "Piping in Earth Dams of Dispersive Clay" by James L. Sherard, Rey S. Decker, and Normal L. Ryker; Proceedings of the Specialty Conference on the Performance of Earth and Earth-Supported Structures, Purdue University/June 1972/ASCE.
- 27.2 Pinhole Test - Procedures described in "Pinhole Test for Identifying Dispersive Soils" by James L. Sherard, Lorn P. Dunnigan, Rey S. Decker, and Edgar F. Steele; Journal of the Geotechnical Engineering Division, Proceedings of the American Society of Civil Engineers, Volume 102, No. GT1, January 1976.
- 27.3 Both the Laboratory Dispersion and Pinhole Tests shall be conducted on each sample for which dispersion data is presented. The presentation and analysis of data generated by these two tests shall constitute a complete test unit.

28 Soluble Salts

- 28.1 If soluble salts are thought to be present based on field logging, a soil conductivity test shall be used for screening purposes. A 12.5 gram sample of soil is immersed in 250 milliliters of distilled water. If the eC is greater than 300 microsiemens a Gravimetric Salt test will be performed. The Gravimetric Salt test takes 10 milliliters of solute, which is evaporated at 60° Centigrade and weighed on an analytical balance. If the evaporate is greater than 4% than the test is redone with a more dilute solution until the value drops below 4% by weight. The National Soils Laboratory has some procedural guidelines for these tests.
- 28.2 If any sample is thought to contain soluble salts the sample should be dried in an oven with a temperature of 60° Centigrade so that the chemically bound water is not released.

29 Testing Report

- 29.1 The Contractor shall furnish to NRCS a summary of all index testing (grain size, Atterberg limits, specific gravity, compaction, relative density) using NRCS Form 354 prior to undertaking other soils testing. As part of this submittal, the Contractor shall recommend any needed changes to the testing plan. A meeting shall be held to discuss and concur in the remaining laboratory testing to be done.
- 29.2 The Contractor shall furnish to NRCS a report presenting all laboratory test data; interpretation and analytical analysis of tests; narrative discussion of conditions pertinent to design, construction, and performance of the works, and design recommendations for those elements of the project dealing with earth or earth-rock construction.

29.3 Interpretations, Analyses and Recommendations

29.4 The Contractor shall evaluate the results of the geological investigation and the soil mechanics testing program and perform the necessary analyses to develop a geotechnical report. The analyses and report shall be in accordance with the requirements of the following divisions of this specification and shall be adequate to provide design, construction, and monitoring recommendations for all elements of the project.

29.5 The complete geotechnical report shall summarize all analyses made and recommendations for the design, construction, and monitoring of the structure(s). The report shall include all information required in the appropriate division of this specification and any additional data considered by the Contractor to be relevant to the design. Unless otherwise specified, all computation and other material adequate to document the work shall be furnished to NRCS.

29.6 Analysis Requirements

29.7 The geotechnical analysis shall determine and document the following items:

29.8 (a) Summary of Material and/or Site Parameters

29.9 The Contractor shall include a summary of material strength, consolidation, permeability, and identification properties. The summary shall include, as appropriate, sections on foundation bedrock, foundation soils, proposed dam fill materials, dam auxiliary spillway materials and any other fills that may be appropriate. The basis for any assumed parameters shall be adequately documented if substantiated by actual borings and field or laboratory tests. The report shall include a narrative summary accompanied by appropriate drawings and tabular summaries of data.

29.10 (b) Dam Foundation Cutoff

29.11 Based on results of the geological investigation, field permeability tests, laboratory permeability tests, and estimates of permeability, the Contractor shall analyze the existing cutoff wall and provide results to NRCS.

29.12 (c) Foundation Preparation (Soil)

29.13 Recommendations for treatment of the soil foundation shall be based on results of field and/or laboratory test, soil mechanics analyses and site geology.

29.14 Recommendations for removal of undesirable material shall include: (1) rationale for the recommendations; (2) the extent, both lateral and vertical, of recommended removal; (3) suggested field procedures for identifying materials to be removed, and (4) alternative methods of treatment considered.

29.15 Recommendations for methods other than removal for treating undesirable foundation soils shall include a rationale for selection of the alternative, including cost consideration and details of recommended procedures adequate for design.

29.16 Foundation removal shall be identified on plotted cross sections and profile of the embankment alignment that includes plotted logs of test holes. Other design parameters may be included in a narrative report.

29.17 Recommendations for treatment methods other than removal shall be included in the narrative report and shall be accompanied by sufficient sketches or drawings to document the design and to form a basis for construction drawings and specifications.

29.18 (d) Foundation Preparation (Rock)

29.19 Recommendations shall be based on the nature of bedrock materials as determined from the foundation investigation and the appropriate laboratory tests and analyses performed.

- 29.20 Recommendations for pressure grouting, dental grouting, slush grouting, gunnite protection, cleaning operations, or other special treatments shall include a rationale for selection of the method or methods of treatment, including cost considerations and details of the treatment methods adequate to provide the basis for design.
- 29.21 A narrative summary of the rationale and the treatment methods recommended shall be included. For complicated foundation problems requiring extensive treatment, the narrative shall be accompanied by graphical and/or tabular illustrations which can be used to document the design and to form a basis for construction drawings and specifications.

29.22 **(e) Principal Spillway Analysis**

29.23 Analysis shall include:

- (1) Foundation for the conduit;
 - (2) Parameters for estimating joint extensibility using the procedures in TR-18;
 - (3) Parameters for calculating loading on the conduit using the procedures in TR-5;
 - (4) Protection against piping along the conduit including filter, drainfill material, and anti-seep collars; and
 - (5) Riser tower for seismic loads using a response spectra analysis based on ASCE 7-05 and design in accordance with applicable portions of ACI 350-08. Other applicable loading and design parameters are subject to NRCS approval.
- 29.24 A narrative summary of recommendations shall be included in the report. Necessary computations and narrative documentation supporting the analysis of the above-mentioned items shall be included.

29.25 **(f) Dam Slope Stability Analysis**

29.26 Stability analysis shall be performed within the general guidelines shown in TR-60, with the following additional provisions:

- 29.27 (1) The stability condition at the end-of-construction need not be analyzed if, in the opinion of the Contractor, and mutually agreed to by NRCS, it would be less critical than the steady seepage or sudden drawdown condition.
- 29.28 (2) Partial pool conditions shall be analyzed for municipal or irrigation reservoirs where fluctuations of the normal pool level may be expected. Most limiting shear strength parameters shall be used and the minimum acceptable safety factor shall be 1.5.
- 29.29 (3) Analyses may be made using a computer program that has the capability of searching for the most critical failure surface. Pertinent information of the computer program to be used and the method of analysis it employs shall be furnished to NRCS for review. If non-computer procedures are used, sufficient trials shall be made to determine the most critical failure surface for each condition analyzed. The use of computer methods of analysis other than those furnished will be subject to the approval of NRCS.
- 29.30 (4) For the sudden drawdown analyses, an acceptable alternative to the use of a composite strength envelope for embankment soils may be used if approved by NRCS.
- 29.31 (5) Minimum acceptable safety factors for the design selected shall be as outlined in TR-60.
- 29.32 (6) Assumptions used regarding the selection of shear parameters and the appropriate type of analysis shall be clearly stated. Assumptions used in developing an assumed phreatic surface and any uplift shall be clearly stated and shown.

29.33 A graphical and/or tabular summary of the results of the slope stability analysis shall be included in the report. Only the most critical failure surfaces for each condition analyzed need be shown in the summary. A narrative summary of the rationale used in selecting methods of analysis, any assumptions pertinent to the analysis, and selection of design recommendations to improve stability shall be included in the report.

29.34 (g) Settlement Analysis (if applicable)

29.35 The settlement analyses shall be based on geological site conditions, engineering properties determined by laboratory tests, or by documented reference to data that can be correlated. Calculations shall be made for any potential differential settlement problems in a direction both transverse and parallel to the fill centerlines.

29.36 Recommendations based on laboratory tests, correlations, and calculations made shall include, but not necessarily be limited to: (1) maximum settlement in the foundation/cutoff trench and embankment; (2) estimated percentage of total settlement occurring during construction; (3) settlement beneath the principal spillway conduit; and (4) alternatives correcting problem situations, including shaping of natural slopes, excavation and removal of highly compressible deposits, pre-wetting or removal of collapsible soils, or other special procedures such as pre-loading and staged construction of soft clays.

29.37 A narrative summary of conditions analyzed and assumptions made, together with results of the analyses, shall be included in the report. Any correlations used shall be clearly stated.

29.38 (h) Dam Seepage Analysis

29.39 Based on the Phase II Report for Millsite Dam, the existing filter material was listed

29.40 Seepage analyses shall be based on site geology, soil and rock properties determined from field and laboratory tests, or on documented assumed properties based on correlation to similar, previously tested materials.

29.41 Analyses shall be by appropriate graphical or numerical methods suitable to the complexity and hazard of the site conditions. Assumptions or models used shall be clearly stated. Procedures listed in Soil Mechanics Notes No. 5 and No. 7 may be used.

29.42 Recommendations shall include, but shall not necessarily be limited to: (1) embankment and/or foundation drains, (2) dimensions and recommended gradation of materials for each drainage zone, (3) lateral and vertical extent of drainage installation with respect to embankment, and (4) any special measures required for treating uplift or large seepage quantities such relief wells, blanketing of reservoir areas, or seepage berms.

29.43 Evaluate as-built embankment filter. Any needed rehab elements need to be designed in accordance with National Engineering Handbook, Part 633 and applicable State requirements. Seepage quantities shall be estimated, as necessary, to ensure that drainage zones and collection pipes are adequately sized and for use in a water budget analysis of the reservoir, where appropriate. Procedures of Soil Mechanics Note No. 3, or other procedures generally accepted by the engineering profession, may be used.

29.44 A narrative summary of the methods employed in the analysis of seepage and of recommended design measures, accompanied by suitable illustrations, if appropriate, shall be included in the report to document the design and to form a basis for construction drawings and specifications. Illustrations of flow nets or other models used in the analyses shall be included.

29.45 (i) Dam Seismic Assessment

Horizontal acceleration at the project site shall be estimated by generally accepted seismic risk procedures. Design accelerations shown in TR-60, NEM Part 531, special studies, the current building code or the Utah Office of the State Engineer, shall be reviewed. Higher values may be used if considered advisable by the Contractor. Assumptions and methodology employed in arriving at the estimate shall be clearly stated.

The liquefaction potential of saturated, cohesionless sand and silt foundation soils shall be evaluated by procedures outlined in Youd, L.T. and Idriss, I.M., 1997, Proceedings of the MCEER Workshop on Evaluation of Liquefaction Resistance of Soils, National Center for Earthquake Engineering Research, Technical Report NCEER-97-0022, SUNY-Buffalo, 276p, or by other methods approved by NRCS.

Defensive design measures to be considered shall include, but not be limited to:

- (1) Embankment drains and transition zones,
- (2) Increased top width and freeboard, and
- (3) Foundation removal or improvement.

A narrative summary of the results of the seismic evaluation shall be included in the report. Significant design recommendations shall be summarized and illustrated as necessary to document the design and to form a basis for construction drawings and specifications.

29.46 (j). Dam Instrumentation

29.47 The Contractor shall evaluate the need to monitor performance of the structure. The degree of uncertainty in the assumptions made during design and the hazard class of the structure shall be considered in evaluating the need for instrumentation.

29.48 Consideration of instrumentation shall include, but not be limited to instruments needed to: (1) measure pore pressures during construction; (2) detect movements of structural elements; (3) measure effectiveness of seepage control measures; and (4) measure seismic events.

29.49 If instrumentation is not recommended, a summary statement indicating the rationale for arriving at this decision shall be included.

29.50 A narrative summary of the recommendations, together with any necessary illustrations, shall be included in the report to document the design and to form a basis for construction drawings and specifications.

29.51 (k) Dam Auxiliary Spillway Evaluation (Soil Materials)

29.52 Parameters required for analysis of auxiliary spillway breaching using procedures of NEH Part 652 shall be provided. These parameters shall include, but not limited to: unified soil classification, plasticity index, d_{15} , percent clay, dry bulk density, void ratio, liquidity index, and dispersion values.

29.53 The parameters shall be based on in-situ laboratory tests on samples representative of the most erodible soil at any location in the bulk length of the spillway to a depth of 30 feet below finished grade or to the base of the embankment, whichever is lowest in elevation.

29.54 Supplemental tests needed to assess the erosion resistance of auxiliary spillway soils shall be performed and their effects on auxiliary spillway design analyzed using the Earth Spillway Erosion Model (NEH Part 628.51) as encoded in SITES.

- 29.55 Recommendations for cut slope configuration in excavated auxiliary spillways shall be based on appropriate engineering property tests and/or correlations, together with a stability analysis of the slope using accepted procedures.
- 29.56 Recommendations for other special spillway features to accommodate drainage, stability berms, local topography or rock formations to mitigate unusual problems shall be clearly documented and justified.
- 29.57 A narrative and/or tabular summary of data, accompanied by appropriate sketches and drawings that adequately convey recommendations for design, shall be included in the report.
- 29.58 A summary of any stability analyses performed, together with assumed material properties and computational methods employed, shall be furnished. Assumptions as to water table or soil profiles shall be clearly stated.
- 29.59 Appropriate drawings shall be furnished for special design features recommended, together with sufficient narrative to document the design and to form a basis for construction drawings and specifications.
- 29.60 Complete computations and computer printouts for the stability analyses are not required. However, this information shall be made available to NRCS on request.

29.61 (I) Dam Auxiliary Spillway Evaluation (Rock)

- 29.62 Analyses of rock material properties shall be based on geological information, rock cores, and appropriate engineering tests.
- 29.63 Slope stability analyses, if performed, shall be based on material property tests or assumptions, as mutually agreed to by the Contractor and NRCS. Computational method and other assumptions employed regarding rock profiles, cross sectional configurations, water tables, or the like, shall be clearly stated.
- 29.64 A summary of the analyses and recommendations for design shall be included in the report to document the design and to form a basis for construction drawings and specifications. Appropriate geologic maps and drawings to document conclusions concerning the features of the rock shall be included.
- 29.65 Stability analyses, if performed, shall be summarized using appropriate sketches, drawings, and narrative aids to describe the analyses. Assumptions as to material properties, profiles, the water table, and computational methods employed shall be clearly stated and shown graphically where appropriate, in order to document the design and to form a basis for construction drawings and specifications.

30 Preliminary Report

- 30.1 The Contractor shall submit to NRCS original and 3 copies of a preliminary report for review and acceptance. The report shall contain all calculations and documentation that was used to develop the design recommendations. NRCS representatives will review the preliminary recommendation report and schedule a meeting to discuss the report with the Contractor.

31 Final Report

- 31.1 The Contractor shall submit original and 6 copies of the final report to NRCS.

32 Alternative Designs

- 32.1 The Contractor shall prepare alternative designs needed to complete the planning of this project.
- 32.2 The scope of the work shall be that which is necessary to formulate and analyze alternatives for the plan document. The Contractor will be required to identify a recommended alternative, and shall study both action and no action alternatives; flood proofing and/or decommissioning shall be considered as appropriate. Multiple action alternatives may be required, depending upon project circumstances. Sufficient design work shall be completed to size the dam, reservoir, and spillways. Stability analysis of the auxiliary spillways shall be completed.
- 32.3 Cost estimates for each alternative, including operation and maintenance costs shall be developed in sufficient detail to allow comparisons and recommend an alternative for implementation. Work completed under this section shall conform to NRCS and State of Utah policy.
- 32.4 The Contractor shall define the area needed to implement the recommended alternative and shall develop the Land Rights Work Map.

33 General Design Considerations

- 33.1 The work will consist of all operations described herein to design and prepare the construction drawings and specifications, quantities, bid schedule, design report, cost estimate, operation and maintenance plan, and other related documents for the installation, repair or rehabilitation of a floodwater retarding structure and its appurtenances. The design will have the required capacities to store sediment, beneficial use water, and floodwater.
- 33.2 The design will conform to the objectives, provisions, and requirements of the respective watershed plan and to all federal, state and local laws, codes, rules and regulations. The design will provide for an installation that will function to accomplish the intended purpose; provide for the safety of the public; be economical to construct, operate and maintain; be compatible with the specific site conditions; and provide a visual resource that enhances the adjacent landscape and is aesthetically appealing.
- 33.3 The Contractor will report to NRCS any omissions, discrepancies, or inadequacies in the data furnished by NRCS as a basis for design. The need for supplementary data or additional investigations will be conveyed to NRCS in writing with suggestions for corrective actions.
- 33.4 The Contractor will maintain a record of all notices, computations, drawings, and other pertinent data for the design. These records will be neatly recorded, indexed, and organized into the following design folders.

General Data	Hydrology	Landscape
Geology	Sedimentation	Land rights
Drainage	Structure	Emergency Action Plan
Survey	Quantity Computations	Operation and Maintenance
Soil Mechanics	Specifications	Correspondence

- 33.5 Assumptions made as a basis for design shall be clearly stated, and all sources of reference data will be listed in the design report.

34 Preliminary Design

- 34.1 The Contractor shall review and verify the adequacy of the site data material furnished by the Sponsor/s or NRCS. The preliminary design must develop the general features of the structural installation including the selection of the most suitable types of structures, the optimum layout and arrangement of the elements of the structural system, and the types and locations of appurtenances. These general features must be determined by considering geologic and topographic site conditions and economy and feasibility of construction, operation, and maintenance. Design criteria and standards for all elements of the project shall comply with the NRCS technical material furnished. When it becomes necessary to depart from NRCS criteria and standards, the request shall be submitted to NRCS for approval. The design shall comply with all local and state rules and regulations necessary to gain approval by state regulatory agencies.
- 34.2 The minimum reservoir capacities for the purposes of storing sediment, beneficial use, and floodwater shall be as shown in Table 3 of the watershed plan or higher if required by flood routing of TR-60 storm hydrology.
- 34.3 Procedures and criteria in TR-60 shall be the minimum acceptable for checking the elevations of the earth dam and associated spillways.
- 34.4 The Contractor shall prepare and submit copies of the preliminary design to NRCS for review. The submittal shall include preliminary design work for the complete structure and appurtenances and shall include, as a minimum, the following information:

35 Layout

- 35.1 Structure site topographic maps needs to show in detail the layout of the embankment, spillways, drainage system, outlet basin, and other appropriate appurtenances.
- 35.2 Cross sectional view of the embankment along the centerline of its structural spillway showing lines, grades, and elevations of the embankment, structural spillway (including riser, barrel, seepage control and outlet), foundation excavation, and outlet basin and channel.
- 35.3 Profile views along centerline of dam, drain and spillway(s) showing geologic data in profile and pertinent design data and construction details.
- 35.4 Cross section views of the embankment, outlet channel, spillway(s), and any other sections necessary to illustrate the work to be performed. Embankment cross sections shall show the zoning plan with a tabulation of material types, placement densities, and moisture content for each zone.

36 Hydraulic and Hydrologic Design

- 36.1 When hydraulic and hydrologic data is furnished by NRCS, the Contractor shall review and revise it as necessary to meet applicable NRCS criteria and available data. The Contractor shall perform computational checks as necessary to verify that coordinates of design hydrographs and flood routings (fixing the design elevations and discharges) are mathematically correct.
- 36.2 Hydraulic and hydrologic data not furnished but required for proper functioning and design of the structure shall be prepared by the Contractor and shall conform to the criteria and standards of NRCS technical materials. Copies of hydraulic and hydrologic data and computations shall be included in the report.

37 Structural Design

- 37.1 Only the structural details essential to the study of alternate designs shall be developed in preliminary design. Structural dimensions shall be sufficiently refined to allow reasonable estimates of quantities and costs. Structural design shall conform to the criteria and guides contained in the NRCS technical material.

38 Miscellaneous

- 38.1 A fencing plan shall be prepared for the dam and spillways.
- 38.2 The Contractor shall prepare the necessary applications for the 401 and 404 permits to be reviewed and finalized by the sponsors.

39 Preliminary Design Report

- 39.1 The report shall be assembled in a manner that will facilitate a thorough engineering review and understanding of the proposed design. In addition to layout, hydraulic and hydrologic design, and structural design, the report shall include:
- 39.1.1 A narrative description of the project.
 - 39.1.2 A summary of data used as a basis for design.
 - 39.1.3 A summary of design criteria used to include stability analyses of earth materials.
 - 39.1.4 Drawings and/or sketches sufficient to define all essential elements of design.
 - 39.1.5 A summary of alternate layouts and designs considered and a detailed description of the alternate chosen. The summary shall clearly demonstrate the reasons for the choice.
 - 39.1.6 Computations and design notes developed during the preparation of the preliminary design.
 - 39.1.7 A preliminary set of the construction specifications (complete with items of work and construction details), material specifications, bid schedule, cost estimate and performance time estimate.
- 39.2 A meeting for review of the work accomplished under this step will be held with the Contractor and NRCS.

40 Final Design

- 40.1 Following review and approval of the preliminary design, the Contractor shall prepare the final design.

40.2 This work shall consist of completing the design and preparing a complete set of construction drawings, construction specifications, quantity calculations, cost estimate, bid schedule, construction performance time, design report, construction pollution prevention plan, quality assurance plan and an operations and maintenance plan.

41 Layout, Hydraulic and Hydrologic Design

41.1 Layout shall consist of presenting the items outlined for the preliminary design with changes incorporated by the more detailed design analysis and NRCS comments.

42 Structural Design

42.1 Structural design shall consist of incorporating NRCS's comments on the preliminary design and completing the structural analysis as may be required for final and complete dimensioning of the structure.

43 Construction Drawings

43.1 The Contractor shall prepare final construction drawings using AutoCAD and shall present all details necessary for construction.

43.2 Drawings shall conform to the drafting standards set forth by NRCS. NRCS standard drawings shall be used where applicable.

43.3 The drawings shall contain projected plan, elevation, and isometric views with adequate explanatory notes, specification references, and dimensions to ensure construction in accordance with the intent of design. There shall be adequate steel schedules, drawings, and bending diagrams to facilitate fabrication and proper placement of all steel, including trash racks, reinforcing bars, valves, etc.

44 Construction Specifications

44.1 The Contractor shall prepare construction and material specifications for the dam and appurtenances. Unless otherwise approved by NRCS, specifications shall conform to standard NRCS specifications contained in National Engineering Handbook, Part 642.

45 Bid Schedule

45.1 The Contractor shall prepare a bid schedule listing all items of work for which payment is to be made. The format shown in National Engineering Handbook, Part 642, shall be followed when preparing the bid schedule.

46 Cost Estimate

46.1 The Contractor shall prepare an estimate of construction costs for each item listed in the bid schedule.

- 46.2 The cost estimate shall be an itemized list for the significant items of work showing the item, specification number, quantity, unit cost, and total cost. The items used in the cost estimate shall be the same as the bid items on the bid schedule and specifications.
- 46.3 Cost data shall be logically and clearly presented. Up-to-date prices shall be used. Costs shall be determined for completed work and shall include furnishing and installing materials, transportation, labor, overhead, profit and any other items incidental to the work.

47 Construction Performance Time Estimate

- 47.1 An estimated construction performance time schedule shall be prepared by the Contractor showing the major items of work, the items that may be performed concurrently, and the estimated performance time to complete each item. The performance time will be based on the estimated amount and types of equipment required to do the job, weather, holidays, and sponsor preferences.

48 Quality Assurance Plan

- 48.1 The quality assurance plan must document the quantity, quality, and timeliness for providing appropriate quality assurance. The components of the plan are:
- 48.1.1 Section 1 - Inspection Requirements
 - 48.1.2 Section 2 - Timing of Inspection
 - 48.1.3 Section 3 - Skills Needed to Perform Inspections
 - 48.1.4 Section 4 - Staff Hours Needed to Perform Inspections
 - 48.1.5 Section 5 - Testing Equipment and Facilities Needed
- 48.2 The plan will assure that adequate quality control and quality assurance measures are planned. NRCS Construction Specification 94 and the Quality Assurance Plan must be in accord.

49 Construction Pollution Prevention Plan (CPPP)

- 49.1 The CPPP should focus on: providing a site description that identifies sources of pollution to storm water discharges; and, identifying and implementing appropriate measures to reduce pollutants in storm water discharges. In order to accomplish this, the CPPP should contain the following:
- Site Description, including the following:
 - Sources of pollution affecting water quality
 - Construction activities expected
 - Sequence of major activities disturbing soil
 - Area(s) to be disturbed
 - Runoff coefficient from post construction site conditions
 - Site map with drainage patterns identified and
 - Name of the receiving waters
 - Controls to Reduce Pollutants
 - Erosion and sediment controls
 - Storm water management intentions

- Specified other controls (404, dust, access roads, et cetera) and,
- State, local, or other requirements

49.2 The plan must also address maintenance procedures for the required facilities and details for inspection.

50 Emergency Action Plan (EAP)

50.1 If a dam is designed and an EAP is required, that document will be completed by the Contractor in accordance with the NEM, Part 520, Section 520.27, the National Operation and Maintenance Manual and the Utah Office of the State Engineer. The final EAP will be completed before construction.

51 Operation and Maintenance (O&M)

51.1 An operation and maintenance plan shall be prepared to summarize the inspection and maintenance needs to ensure the dam will operate adequately for its design life. The plan shall include numerous operation, maintenance, and repair features of all component parts. The plan shall also identify the approximate yearly cost estimate to execute the O&M plan.

52 Final Design Report

52.1 The Contractor shall prepare and furnish to NRCS copies of the final design report.

52.2 The report shall be a bound volume consisting of design notes pertinent to final design including computations, sketches, drawings, specifications, quantity estimates, bid schedule, cost estimate, performance schedule, and other data pertinent to final design and not included in the preliminary design report.

52.3 Data relating to final design but presented in the preliminary design report may be referenced in the final design report.

52.4 The report shall be sectionalized and indexed (hyper-linked bookmarks) in a logical manner. The number of sections required will vary with the scope and complexity of the design; however, the organization of the report shall generally conform to the following outline:

- Work Plan
- Geologic Investigation Report
- Soil Mechanics Report

Design Report

Summary	Structural design
Authority	Environmental considerations
Description of job	Construction drawings
Design objective	Specifications
Basis for design	Bid schedule
General basic data	Location and layout
Hydrology	Hydraulic design
Foundation design	Embankment design

Instrumentation
 Cost estimate
 Construction considerations
 Hydrology

Spillway Erodibility Indices
 Construction schedule
 O & M requirements

Design Analysis Appendices

Hydraulic Design

Geotechnical Design → →

Seepage and control; Stability Analysis; Foundation
 Embankment; Instrumentation

Spillway Erodibility Indices
 Structural Design
 Instrumentation
 Instructions to the Engineer

Construction Drawings
 Specifications
 Bid Schedule
 Cost Estimate
 Construction Schedule
 O&M Plan
 Quality Assurance Plan

53 Deliverables for Final Review and Approval

53.1 NRCS will review the final design before the Contractor/NRCS review meeting. NRCS will initiate this review meeting.

- Four copies of the following:
 - Construction specifications.
 - Construction drawing sheets and the draft Utah Office of the State Engineer filing sheet.
 - Operation and Maintenance Plan
 - Final Design Report and its appendices
 - Bid schedule
 - Cost estimate and supporting data
 - Construction performance time
 - Construction Pollution Prevention Plan
 - Draft Emergency Action Plan
 - Quality Assurance Plan
 - Utah Office of the State Engineer Check List

54 Final Deliverables

54.1 Upon final approval of the Deliverables for Field Check, Review and Approval, the Contractor shall furnish the following items to NRCS:

54.2 Printed Documents:

- Five bound copies and one original of the Final Design Report and its appendices signed and sealed by the designer.
- Five bound copies and one original (34 inch x 22 inch) of all construction drawing sheets signed and sealed by the designer.
- Five bound copies and one original construction specifications signed and sealed by the designer.
- Six copies of the accepted bid schedule.
- Two copies of the accepted cost estimate signed and sealed by the designer and supporting data.
- Six copies of the accepted construction performance time.
- Five bound copies and one original of the accepted Operation and Maintenance Plan.
- Five bound copies and one original of the accepted Construction Pollution Prevention Plan.
- Six bound copies of the accepted Draft Emergency Action Plan.
- Five bound copies and one original of the accepted Quality Assurance Plan.

54.3 Electronic Documentation

- The data files shall be supplied on a DVD.
- One copy of all CAD generated construction drawings sheets of the accepted, final plan using pdf format.
- One copy of all text prepared with a word processor suitable to be read with pdf.

55 New or Supplemental Watershed Plan and Environmental Document Connection

55.1 The Contractor shall use the Final Supplemental or (NEW) Watershed Plan and Environmental Document in conjunction with and in support of the engineering design tasks. The proposed/selected alternative documented in the Final Plan-EA/EIS will be used for generation of a final engineering design based on the specific watershed measure carried forward for Final Design.

56 Landrights Work Maps

56.1 Landrights work maps shall be prepared electronically on a georeferenced aerial photographic base. Maps shall be prepared to be no less accurate than required by nationally recognized map accuracy standards for 1:4,800 maps (scale of 1 inch to 400 feet). The NRCS shall furnish the information required to determine the physical features necessary to complete the map. The landrights work map(s) shall, at a minimum, show the following features:

- Existing physical features in the project area.
- Proposed project feature locations and or project boundary.
- Major project features.
- Easement limits, including construction campsite or other easement needed for construction.
- Property lines and owners with address.
- Utilities and owners with contact name, phone number and address.
- Section numbers and corners, township and range lines, and benchmark locations.
- Access routes for construction and maintenance.

- Table of easement requirements by property owner.
 - Map scale and North arrow.
 - Legends and title block.
 - Match line between corresponding sheets, if applicable.
- 56.2 This item shall also consist of preparing drawings and data for any required permits and NEPA documents.

57 Conferences, Review and Approval

- 57.1 Work shall be reviewed and verified for accuracy by the Contractor's personnel prior to conference meetings and prior to submittals to NRCS.
- 57.2 Liaison will be maintained by the Contractor with the Sponsor and NRCS to the extent necessary to ensure that NRCS is aware and concurs with the progress of the work, selection of alternatives, and other matters concerning the development of general or specific elements of the supplemental watershed plan.
- 57.3 NRCS will provide technical oversight on all phases of the planning process from initiating planning to final plan completion. Conferences shall be held whenever requested by the Contractor or the Sponsor and NRCS during which questions relating to the project will be discussed, work previously performed will be reviewed, and decisions made with a view toward expediting the plan of work. Work that in the opinion of NRCS does not require conference discussions may be reviewed and accepted by correspondence or telephone conversations. Where conferences are required, the Contractor shall notify NRCS and the Sponsor in advance of the time of each conference. An agenda for each meeting/conference should be considered.
- 57.4 The Contractor shall prepare notes summarizing discussions and decisions reached during conferences or in telephone conversations and promptly furnish one copy of the notes to NRCS. Meetings will be held wherever practicable.

58 Ownership of Documents

- 58.1 The NRCS acknowledges that the supporting data and documents generated by the Contractor are instruments of professional service. However, all documents, including resource inventory data, engineering, and economic model outputs, geologic investigation reports, drawings, maps, estimates, and all other data used in the preparation of the Supplemental Watershed Plan and Environmental Assessment and Final Design are the property of the NRCS.

59 Appendix I. NRCS Reference Material

The following reference materials for use in developing the work products outlined in this agreement are available through NRCS.

NRCS may have additional technical material available for reference. The Contractor should discuss specific needs with the appropriate NRCS discipline representative to determine applicable references and to obtain copies of those references.

Primary References are:

National Watershed Program Manual (NWPM)

<https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/wfpo/>

National Resources Economics Handbook (NREH)

National Engineering Manual (NEM) <https://directives.sc.egov.usda.gov/RollupViewer.aspx?hid=27418>

NEM Part 511 - Design

NEM Part 512 - Construction

NEM Part 520 – Soil And Water Resource Development, Subpart C - Dams

National Engineering Handbook (NEH)

National Operation and Maintenance Manual (NO&MM)

Technical Release (TR)-60 - Earth Dams and Reservoirs

“Economic And Environmental Principles And Guidelines For Water And Related Land Resources Implementation Studies” Dated March 10, 1983.

Specific Additional References, listed by discipline, include:

Survey

NEM Part 540 – Field Surveys

TR-62 - Engineering Layout, Notes, Staking and Calculations

Economics

National Resources Economics Handbook (NREH)

Econ2, Floodwater Damage Computer Program

Urb1, Urban Economics Damage Computer Program

Economic & Environmental Principals & Guidelines for Water Related Land Resources (PG)

Abbreviations:

DN - Design Notes

GN - Geology Notes

NEH - National Engineering Handbook

NEM - National Engineering Manual

NO&MM - National Operation & Maintenance Manual

NREH - National Resources Economics Handbook

NWSM - National Watershed Manual

SMN - Soil Mechanics Notes

TP - Technical Paper

Hydrology

NEM Part 530 - Hydrology

NEH Section 4 - Hydrology

NEH Part 630 - Hydrology

Chapter 1, Introduction

Chapter 2, Procedures

Chapter 3, Preliminary Investigations

Chapter 4, Storm Rainfall Depth

Chapter 5, Streamflow Data
Chapter 6, Stream Reaches And Hydrologic Units
Chapter 12, Hydrologic Effects Of Land Use And Treatment
Chapter 18, Selected Statistical Methods
NRCS-Utah Standard Rainfall Distributions and Procedure
NEH Part 728.5 - Sites Water Resources Site Analysis Computer Program
TR-20 - Computer Program for Project Formulation (Hydrology)
TR-55 - Urban Hydrology

Hydraulics

NEH Section 5 - Hydraulics
TR-25 - Design of Open Channels
TR-29 - Hydraulics of Two-Way Covered Risers
TR-39 - Hydraulics of Broad-Crested Spillways
TR-66 - Simplified Dam-Breach Routing Procedure
TR-70 - Hydraulic Proportioning of Two-Way Covered Baffle Inlet Riser
TR-49 - Criteria for the Hydraulic Design of Impact Basins Associated with Full Flow in Pipe Conduits
TR-64 - Floodway Determination Computer Program
DN-6 - Armored Scour Hole for Cantilever Outlet
DN-8 - Entrance Head Losses in Drop Inlet Spillways
DN-18 - "Unattached" Engineering Standard Drawings
HRB-108 - Highway Research Board Tentative Design Procedure for Riprap Lined Channels
SCS TP-106 - Hydraulic Design of the Box Inlet Drop Spillway
SCS TP-107 - Tests On Chutes with SAF Stilling Basins
USBR EM-25 - Hydraulic Design of Stilling Basins and Energy Dissipators

Geology

NEM Part 531 - Geology
NEH Section 3 - Sedimentation
NEH Section 8 - Engineering Geology (Chapter 5 Is Void; See Part 531 of the NEM)
NEH Part 628 - Dams
Chapter 51, Earth Spillway Erosion Model
Chapter 52, Field Procedures Guide For The Headcut Erodibility Index
NEH Part 631 - Geology
Chapter 12, Rock Material Field Classification System
TR-17 - Geologic Investigations for Watershed Planning
TR-27 - Laboratory and Field Test Procedures for Control of Density and Moisture of Compacted Earth Embankments
TR-32 - Procedure for Determining Rates of Land Damage, Land Depreciation and Volume of Sediment Produced by Gully Erosion
TR-51 - Procedure for Computing Sheet and Rill Erosion on Project Areas
TR-78 - The Characterization of Rock for Hydraulic Erodibility
GN-3 - Geologic Investigation Process
GN-5 - Soil Sample Size Requirements for Soil Mechanics Laboratory Testing
SMN-6 - Glossary, Symbols, Abbreviations, and Conversion Factors

Soil Mechanics

NEH Part 628 - Dams

Chapter 50, Earth Spillway Design

Chapter 51, Earth Spillway Erosion Model

NEH Part 633 - Soils Engineering

Chapter 26, Gradation Design Of Sand And Gravel Filters

TR-26 - The Use of Soils Containing More Than 5 Percent Rock Larger Than the No. 40 Sieve

TR-27 - Laboratory and Field Test Procedures for Control of Density and Moisture of Compacted Earth Embankments

TR-68 - Seismic Analysis of Risers

SMN-3 - Soil Mechanics Considerations for Embankment Drains

SMN-5 - Flow Net Construction and Use

SMN-6 - Glossary, Symbols, Abbreviations, and Conversion Factors

SMN-7 - The Mechanics of Seepage Analysis

SMN-8 - Soil Mechanics Testing Standards

SMN-9 - Permeability of Selected Cleans Sands and Gravels

SMN-12 - Portable Pinhole Test Apparatus

SMN-13 - Dispersive Clays

DN-24 - Guide for the Use of Geotextiles

Forms

Form 127 - Soil Permeability

Form 128 - Consolidation Test

Form 128A - Log Time Consolidation

Form 129 - Undisturbed Sample Characteristics

Form 130 - Grain Size Analysis

Form 352 - Compaction and Penetration Resistance

Form 353A - Soil Classification

Form 354 - Soil Mechanics Laboratory Data

Form 355A - Triaxial Shear Test

Form 355B - Triaxial Shear Test with Pore Pressure Measured

Form 357 - Summary – Slope Stability Analysis

Form 366 - Direct Shear Test

Form 372A - Placement of Earth Fill Materials

Drafting

NEM Part 541 - Drafting

TR-73 - Computer Aided Design and Drafting (CADD) Standards

Design

NEM Part 536 - Structural Engineering

NEM Part 542 - Specifications

NEM Part 543 - Materials

NEH Section 6 - Structural Design
NEH Section 11 - Drop Spillways (Hydraulic Portion Only)
NEH Section 14 - Chute Spillways
NEH Section 19 - Construction Inspection
NEH Part 642 - Specifications For Construction Contracts
 Chapter 1, General Contract Specification Procedures
 Chapter 2, National Standard Construction Specifications
 Chapter 3, National Material Specifications
TR-5 - Structural Design of Underground Conduits
TR-18 - Computation of Joint Extensibility Requirements
TR-30 - Structural Design of Standard Covered Risers
TR-31 - Structural Analysis and Design at Low Stage Inlets
TR-37 - Structural Analysis and Design at Base of Riser with Conduit Openings in Both Endwalls
TR-50 - Design of Rectangular Structural Channels
TR-54 - Structural Design of SAF Stilling Basins
TR-63 - Structural Design of Monolithic Straight Drop Spillways
TR-67 - Reinforced Concrete Structural Design
TR-74 - Lateral Earth Pressures
TR-77 - Design and Installation of Flexible Conduits
DN-2 - Required Three-Edge Bearing Strength for Rigid Pipe
Example Construction Drawings
Example Construction Specifications
Example Quality Assurance Plan
Example Construction Pollution Prevention Plan

60 Appendix II. NRCS Surveying Preferences

General - All paper or electronic survey notes and sketches shall follow recognized professional practice and industry standards. Notes, sketches, and other data shall be complete, neat, legible, and reproducible. The work shall be organized to facilitate ease in review and shall allow reproduction or production of hard copies. When survey equipment that requires little or no manual recording of field data is used, the survey data shall include information allowing NRCS to review and interpret the raw data.

Natural Stream Channel - Begin plan and profile stationing at the most upstream extent of the area of interest. The thread of the stream or water line at low water shall be shown on the plan. The profile need not go below the low water surface, except that the streambed shall be profiled through riffles.

Centerline of Dam - Stationing should progress from left to right when looking in a downstream direction. Station 10+00 should be established on the left abutment near the crest of the dam for new dams. Stationing will be as shown on the as-built drawings for existing dams.

Centerline of Principal Spillway - The intersection angle with the centerline of the dam should be 90 degrees. Stationing should increase in a downstream direction. NRCS typically sets the principal spillway centerline station, where it intersects the dam centerline, as station 5+00 for new dams. Stationing will be as shown on the as-built drawings for existing dams.

The natural stream channel downstream of the principal spillway outlet should be cross sectioned at distances approximately 400, 800, 1200, and 1600 feet. These cross sections should be taken perpendicular to bank full stream flow. The cross section would define the channel centerline, bottom width, and top of the bank, and it should extend at least 25 feet beyond the bank. Distances on the cross section should be measured right and left when facing downstream.

Centerline of Auxiliary Spillway - The intersection of this centerline and the dam centerline becomes the point for construction layout of the auxiliary spillway. Therefore, it is necessary to tie the two lines together with stationing and horizontal angle. Stationing should increase in a downstream direction. NRCS typically sets the auxiliary spillway centerline station, where it intersects the dam centerline, as station 10+00. Stationing will be as shown on the as-built drawings for existing dams.

On new dams since the auxiliary spillway is a borrow area, NRCS establishes a 100-foot by 100-foot grid on area of the auxiliary spillway. This provides a system to use for the geologic investigation and for computing quantities. Grid lines are perpendicular to the auxiliary spillway centerline. The Contractor shall designate the grid points by base line stations and distance up or downstream.

Borrow Area(s) - Profiles of borrow area(s) in the reservoir should parallel the dam centerline at 200-foot intervals beginning 200 feet upstream from the dam centerline. If the dam centerline has angle point, use the longest leg as the baseline for layout of borrow grids. Each profile upstream from the dam centerline should be designated alphabetically starting with A. Profile stationing should mimic the stationing on the dam and identified by station and letter (such as 19+00, A). Profile downstream from the dam centerline could be designed alphabetically starting with AA.

Geologic Investigation - Investigation boring holes and excavations should be located horizontally using the above suggested centerlines or grids with a vertical elevation established at each hole.

Valley Cross Sections - The valley downstream of the dam should be cross sectioned at intervals not to exceed 2500 feet starting from the centerline of the dam and extending down to the point of intersection where the breach wave crest and the flood level of the 100-year frequency storm from the uncontrolled drainage area. If development exists downstream from this point and is below the 100-year flood level, valley sections should be extended to include such development or until the depth of the flooding from the breach discharge no longer creates a hazard. Valley sections should be taken more often if the valley cross sectional area changes significantly. Each valley section shall be taken perpendicular to the direction of floodwater flow and shall define the bottom width and centerline of the channel and the tops of bank. The portion of the valley section across the channel shall be perpendicular to stream flow, which may cause the section to be bent. Valley sections should extend vertically to at least six tenths of the planned dam height above the stream channel. Distances should be measured from right and left when facing downstream.

Centerline of Downstream Affected Roads - The crown of all downstream roads within the study area should be profiled to an elevation which is equal to or higher than six tenths the planned height of the dam above the stream channel. Stationing shall progress from left to right when looking in a downstream direction. The centerline of the bridge or culvert shall be located on the road profile. Structure dimensions and skew angle from the road should be measured. Valley sections should be taken upstream and downstream of roads.

Drainage Structures - Structures in the channel should be measured in sufficient detail to permit determination of the hydraulic characteristics of the structure. This may include, but not be limited to, a cross section of the structure, its skew to flow direction, the shape and number of pilings and/or piers, width and or length of the structure, size and angle of wing walls, flow line elevations, and cross sections upstream and downstream of the structure.

Building Elevation Surveys - Threshold elevations of buildings in the potentially inundated area should be determined. The project economist should be present or consulted during surveys of building threshold elevations to assure that locations on the buildings are surveyed. Additional vertical dimensions should be recorded to support accurate economic evaluations, particularly related to the elevation of zero damage (e.g. basement windows, et cetera).

Permanent Benchmarks - These must be positioned such that they will not be disturbed or made useless by future construction operations. They should consist of a bronze pin or caps set in concrete or a number 5 reinforcing bar 36 inches long, firmly set and driven flush with the ground. An aluminum or plastic cap should be set on the #5 re-bar with a lath set nearby.

61 Appendix III. NRCS Drafting Preferences

General - All maps, drawings, and notes, whether paper or electronic, shall follow recognized professional practice and industry standards. Notes, sketches, and other data shall be complete, neat, legible, and reproducible. The drafting work shall be organized to facilitate ease in review and allow reproduction or production of hard copies. Where drafting products are delivered as electronic files, NRCS must be able to reproduce the same view, map, drawing, or note. Therefore, AutoCad files must contain named views and layouts and ArcGIS must contain unique view with associated layouts, or the drafting products can be delivered as pdf files or a similar format.

NRCS uses drawing sheets measuring 22 by 34 inches with a one-half inch margin on top, bottom, and right end and a one and one-half inch border on the left end. Plan views should be drawn so that flow is toward the right side or the top of the sheet or with north to the top of the sheet. Profiles representing a view essentially parallel to the direction of stream flow should be drawn so the upstream end is on the left and flow progresses from left to right. Elevations and sections representing views essentially normal to stream flow are to be drawn so that they are viewed from upstream (with the observer looking downstream). A series of sheets should be numbered (example: Sheet 10 of 27).

Map or drawings must, as appropriate, include the following details: north arrow, bar scale, and contour interval. In addition, Map and drawings must, as appropriate, include the following: centerlines, bench mark descriptions, monument descriptions, ties between centerlines and monuments or bench marks, coordinate grid system.

If requested, NRCS will furnish a typical, blank drawing file in the following formats: AutoCad dwg or dxf, ASCII file, or ArcGIS template. This blank drawing will include NRCS title blocks in a 22-inch by 34-inch drawing template.

Topographic Maps and Plan Views - Maps shall contain planimetric features, which are visible or identifiable on the base aerial image, including buildings, ditches, terraces, reservoirs, trails, roads, railroads, quarries, borrow pits, cemeteries, wooded areas, utilities (i.e. telephone, telegraph, electric, underground cables, and pipelines and sewers), fence lines, walls, and similar man-made features. The designation of state and federal numbered highways should be shown. Structures such as bridges, trestles, tunnels, piers, retaining walls, dams, oil, water, other storage tanks, and the like should also be shown. Maps should also show drainage ways which are longer than one inch at map scale, water features (i.e. springs, falls, rapids, ponds, lakes, swamps, marshes, and bogs), rock ledges, cliffs, and other essential topographic features.

Spot elevations should be shown for: water levels, hilltops, saddles, depression bottoms, intersections of important roads and railroads, and along the ridge and channel of terraces. Spot elevations should also be shown where contours are more than three inches apart at map scale.

Each contour should be drawn as a 3D polyline and shown as a solid line, except where it is obscured by an overhanging bluff or ledge, and on maps compiled by photogrammetry where the ground cannot be seen due to dense woods. In such ground-hidden places, the contours should be shown as dashed

(broken) lines. Index contours should be established using every fifth contour, and these index contours should be labeled with its actual elevation.

Horizontal control point used for photogrammetric surveys must be plotted on the finished maps with an accuracy of 1/100 of an inch of its true position as expressed by the plane coordinates calculated for the point. Ninety percent of all planimetric features should be plotted so that their position on maps are accurate to within at least 1/40th of an inch, and no feature should be more than 1/20th of an inch from their true coordinate position. Ninety percent of all spot elevations placed on maps should have an accuracy of at least one-fourth the contour interval and the remaining 10 percent shall be not in error by more than one-half the contour interval.

Profiles of Centerlines - Profiles should typically be plotted so that the ratio of horizon scale to vertical scale is equal to 5 or 10. For example, if the horizontal scale is 1 inch equals 100 feet then the vertical scale would be 1 inch equals 10 or 20 feet. For plan and profile views, NRCS typically uses a horizontal scale of 1 inch equals 100 feet.

Cross Sections – Cross sections should be plotted with the smallest station number in the lower left corner of the drawing and the next station plotted above the first. If space exists, a second or third column of cross sections may be plotted to the right of the first column. By plotting up the sheet in order of increasing stationing, the view shows left on the left and right on the right, and the individual viewing the cross sections can visualize the stream reach. The plot should show the centerline location. The human eye can perceive the actual land form if the plotted ratio between the horizontal scale and vertical scale is 5.

Cross section of drainage structures should be included. Typically, it takes two orthographic sketches of the structure at a scale that facilitates clear dimensioning of the hydraulic characteristics of the structure or one cross section with notes that describe the structure's dimensions, elevations, materials, and condition.

62 Appendix IV. NRCS Geotechnical Terms and Preferences

Terms relating to geology and soil mechanics should be accordance with SCS Soil Mechanics Note 6. Geologic terms not contained in NRCS reference material should conform to “Glossary of Geology and Related Sciences,” the American Geological Institute. Soil mechanics definitions not contained in NRCS reference material should conform to ASTM D 653, “Terms and Symbols Relating to Soil and Rock Mechanics.”

The following additional definitions should also apply:

- Rough Profile (or Profile Section): A soil or rock profile showing the depths to principal strata and depths to the free groundwater level (in cases where exploration extends below groundwater levels).
- Detailed Profile (or Profile Section): A soil or rock profile showing not only the major strata but also the dip and strike of the strata, thin strata, seams, faults, lenses, shear planes, water bearing strata, piezometric pressure at various depths (when pertinent) and other details critical to the purpose of the investigation.
- Bedrock Profile: A profile showing only surface elevations and depths to rock, or, in some cases, to strata of exceptional bearing capacity such as hardpan, hard clay or very dense sands and gravels.
- Significant Depth: The vertical distance below the ground surface within which: (1) the loads applied to the foundation may be expected to alter the state of stress in the foundation materials enough to produce critical shear strains or to cause significant increments of settlement by compression of the foundation; or, (2) the permeability characteristics of the foundation profile may be expected to influence the stability or functional adequacy of the proposed structure.
- Representative Samples: Samples of soil or rock (either disturbed or undisturbed) selected and recovered in such a manner as to insure that they indicate the true nature of the material in the zone under consideration to the extent required to determine the characteristics and properties pertinent to the purpose of the investigation.

Application for Federal Assistance SF-424

* 1. Type of Submission: <input type="checkbox"/> Preapplication <input checked="" type="checkbox"/> Application <input type="checkbox"/> Changed/Corrected Application	* 2. Type of Application: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision	* If Revision, select appropriate letter(s): <input type="text"/> * Other (Specify): <input type="text"/>
---	---	--

* 3. Date Received: <input type="text"/>	4. Applicant Identifier: <input type="text"/>
--	---

5a. Federal Entity Identifier: <input type="text"/>	5b. Federal Award Identifier: <input type="text"/>
---	--

State Use Only:

6. Date Received by State: <input type="text"/>	7. State Application Identifier: <input type="text"/>
--	--

8. APPLICANT INFORMATION:

* a. Legal Name: <input type="text" value="SANTAQUIN CITY"/>	
* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="87-6000900"/>	* c. Organizational DUNS: <input type="text" value="1687376820000"/>

d. Address:

* Street1:	<input type="text" value="275 West Main Street"/>
* Street2:	<input type="text"/>
* City:	<input type="text" value="Santaquin"/>
County/Parish:	<input type="text"/>
* State:	<input type="text" value="UT: Utah"/>
Province:	<input type="text"/>
* Country:	<input type="text" value="USA: UNITED STATES"/>
* Zip / Postal Code:	<input type="text" value="84655-0000"/>

e. Organizational Unit:

Department Name: <input type="text"/>	Division Name: <input type="text"/>
---	---

f. Name and contact information of person to be contacted on matters involving this application:

Prefix: <input type="text" value="Mr."/>	* First Name: <input type="text" value="Ben"/>
Middle Name: <input type="text"/>	
* Last Name: <input type="text" value="Reeves"/>	
Suffix: <input type="text"/>	

Title: <input type="text" value="Santaquin City Administrator"/>

Organizational Affiliation: <input type="text" value="Santaquin City"/>

* Telephone Number: <input type="text" value="801 754-3211"/>	Fax Number: <input type="text" value="801 754-1620"/>
--	--

* Email: <input type="text" value="breeves@santaquin.org"/>
--

Application for Federal Assistance SF-424

* 9. Type of Applicant 1: Select Applicant Type:

C: City or Township Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

* 10. Name of Federal Agency:

USDA-NATURAL RESOURCES CONSERVATION SERVICE

11. Catalog of Federal Domestic Assistance Number:

10-904

CFDA Title:

Watershed Protection and Flood Prevention

* 12. Funding Opportunity Number:

* Title:

Watershed Flood Prevention Operations (WFPO)

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Santaquin_WSOP_Proposal_Area.pdf

Add Attachment

Delete Attachment

View Attachment

* 15. Descriptive Title of Applicant's Project:

Santaquin City Supplemental Plan-EA for the addition of priority flood control structures.

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant

* b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment

Delete Attachment

View Attachment

17. Proposed Project:

* a. Start Date:

* b. End Date:

18. Estimated Funding (\$):

* a. Federal	<input type="text" value="370,000.00"/>
* b. Applicant	<input type="text"/>
* c. State	<input type="text"/>
* d. Local	<input type="text"/>
* e. Other	<input type="text"/>
* f. Program Income	<input type="text"/>
* g. TOTAL	<input type="text" value="370,000.00"/>

* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?

a. This application was made available to the State under the Executive Order 12372 Process for review on

b. Program is subject to E.O. 12372 but has not been selected by the State for review.

c. Program is not covered by E.O. 12372.

* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)

Yes No

If "Yes", provide explanation and attach

Add Attachment

Delete Attachment

View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications** and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)

** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: * First Name:

Middle Name:

* Last Name:

Suffix:

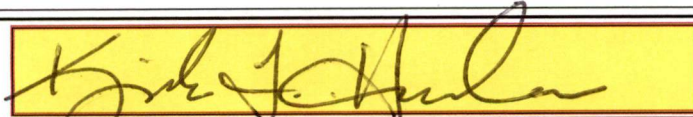
* Title:

Telephone Number:

Fax Number:

* Email:

* Signature of Authorized Representative:



* Date Signed:

BUDGET INFORMATION - Non-Construction Programs

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. PLANNING - ENVIRONMENTAL DOCUMENTATION	10-904	\$ [REDACTED]	\$ 0.00	\$ 370,000.00	\$ [REDACTED]	\$ 370,000.00
2. [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
3. [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
4. [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
5. Totals		\$ [REDACTED]	\$ [REDACTED]	\$ 370,000.00	\$ [REDACTED]	\$ 370,000.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
	PLANNING - ENVIRONMENTAL DOCUMENTATION				
a. Personnel	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$
b. Fringe Benefits	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
c. Travel	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
d. Equipment	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
e. Supplies	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
f. Contractual	<input type="text" value="370,000.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
g. Construction	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
h. Other	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
i. Total Direct Charges (sum of 6a-6h)	<input type="text" value="370,000.00"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	\$
j. Indirect Charges	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	\$
k. TOTALS (sum of 6i and 6j)	\$ <input type="text" value="370,000.00"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$
7. Program Income	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$

Authorized for Local Reproduction

SECTION C - NON-FEDERAL RESOURCES

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8. PLANNING - ENVIRONMENTAL DOCUMENTATION	\$ 0.00	\$	\$	\$ 0.00
9.				
10.				
11.				
12. TOTAL (sum of lines 8-11)	\$	\$	\$	\$

SECTION D - FORECASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ 370,000.00	\$ 100,000.00	\$ 100,000.00	\$ 90,000.00	\$ 80,000.00
14. Non-Federal	\$				
15. TOTAL (sum of lines 13 and 14)	\$ 370,000.00	\$ 100,000.00	\$ 100,000.00	\$ 90,000.00	\$ 80,000.00

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

(a) Grant Program	FUTURE FUNDING PERIODS (YEARS)			
	(b) First	(c) Second	(d) Third	(e) Fourth
16. PLANNING - ENVIRONMENTAL DOCUMENTATION	\$	\$	\$	\$
17.				
18.				
19.				
20. TOTAL (sum of lines 16 - 19)	\$	\$	\$	\$

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges:		22. Indirect Charges:	
23. Remarks:			

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

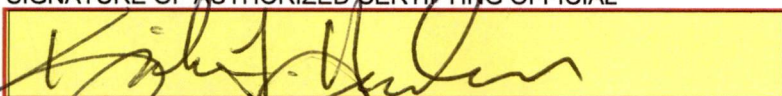
PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.
10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.
19. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL 	TITLE Mayor
APPLICANT ORGANIZATION SANTAQUIN CITY	DATE SUBMITTED

AD-3031

U.S. Department of Agriculture
ASSURANCE REGARDING FELONY CONVICTION
OR TAX DELINQUENT STATUS FOR CORPORATE APPLICANTS

NOTE: The following statement is made in accordance with the Privacy Act of 1974 (5 USC 552(a)–as amended). The authority for requesting the following information for USDA agencies and offices is in sections 745 and 746 of the Consolidated Appropriations Act, 2016, Pub. L. 114-113, as amended and/or subsequently enacted. The information will be used to document compliance with appropriations restrictions.

According to the Paperwork Reduction Act of 1995 an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number of this information collection is 0505-0025. The time required to complete this information collection is estimated to average 3 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The provisions of appropriate criminal and civil fraud, privacy, and other statutes may be applicable to the information provided.

This award is subject to the provisions contained in the Consolidated Appropriations Act, 2016, Pub. L. 114-113, Division E, Title VII, sections 745 and 746, as amended and/or subsequently enacted for U.S. Department of Agriculture (USDA) agencies and offices regarding corporate felony convictions and corporate federal tax delinquencies.

Accordingly, by accepting this award the corporation recipient acknowledges: (1) that it does not have a Federal tax delinquency, meaning that it is not subject to any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability, **and** (2) that it has not been convicted of a felony criminal violation under any Federal law within 24 months preceding the award, unless a suspending and debarring official of the USDA has considered suspension or debarment of the recipient corporation based on these convictions and/or tax delinquencies and determined that suspension or debarment is not necessary to protect the interests of the Government. If the recipient fails to comply with these provisions, the agency will annul this agreement and may recover any funds the recipient has expended in violation of the above cited statutory provisions.



APPLICANT'S SIGNATURE (BY)

Mayor

TITLE/RELATIONSHIP OF THE INDIVIDUAL IF SIGNING IN A REPRESENTATIVE CAPACITY

Santaquin City

BUSINESS NAME

12/13/2017

DATE SIGNED (MM-DD-YYYY)

The U.S. Department of Agriculture (USDA) prohibits discrimination in all of its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, political beliefs, genetic information, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Assistant Secretary for Civil Rights, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, S.W., Stop 9410, Washington, DC 20250-9410, or call toll-free at (866) 632-9992 (English) or (800) 877-8339 (TDD) or (866) 377-8642 (English Federal-relay) or (800) 845-6136 (Spanish Federal-relay). USDA is an equal opportunity provider and employer.

Certification Regarding Lobbying

Certification for Contracts, Grants, Loans, and Cooperative Agreements

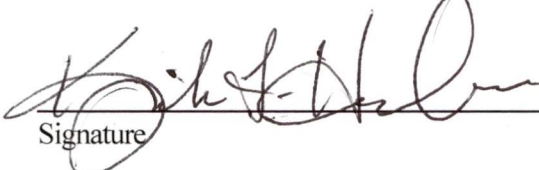
The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, 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 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 shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

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 section 1352, title 31, U.S. Code. 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.

Santaquin City
Organization Name PR/Award Number or Project Name

Kirk F. Hunsaker
Name and Title of Authorized Representative


Signature 12/13/2017
Date



U.S. Department of Agriculture
Natural Resources Conservation Service

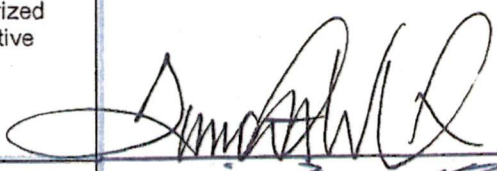
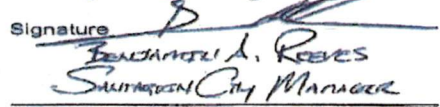
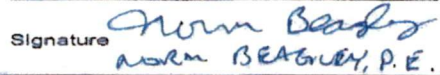
NOTICE OF GRANT AND AGREEMENT AWARD

1. Award Identifying Number NR188D43XXXXC003	2. Amendment Number	3. Award /Project Period 01/15/2018 - 09/30/2019	4. Type of award instrument: Cooperative Agreement
5. Agency (Name and Address) Natural Resources Conservation Service 125 South State Street, Room 4010 Salt Lake City, UT 84138-1100		6. Recipient Organization (Name and Address) SANTAQUIN CITY OF TOWN HALL 275 W MAIN ST SANTAQUIN UT 84655-5509 DUNS: 168737682 EIN:	
7. NRCS Program Contact Name: Bronson Smart Phone: (801) 524-4559 Email: bronson.smart@ut.usda.gov	8. NRCS Administrative Contact Name: MOIRA SANFORD Phone: (614) 255-2495 Email: MOIRA.SANFORD@OH.USDA.GOV	9. Recipient Program Contact Name: Norm Beagley Phone: (801) 754-3211 Email: nbeagley@santaquin.org	10. Recipient Administrative Contact Name: Ben Reeves Phone: (801) 754-3211 Email: breeves@santaquin.org
11. CFDA .904	12. Authority 16 U.S.C. 1001-1009 33 U.S.C. 701b-1 68 Stat. 666, as amended Public Law 83-566 Public Law 84-1018, 70 Stat. 1088 Public Law 85-865, 72 Stat. 1605 Public Law 86-468, 74 Stat. 131, 132 Public Law 86-545, 74 Stat. 254 Public Law 87-703, 76 Stat. 608 Public Law 90-361, 82 Stat. 250	13. Type of Action New Agreement	14. Program Director Name: Norm Beagley Phone: (801) 754-3211 Email: nbeagley@santaquin.org
15. Project Title/ Description: PL566 Santaquin Watershed Supplemental Plan-EA.			
16. Entity Type: 02 = City or Township government			
17. Select Funding Type			
Select funding type:	<input checked="" type="checkbox"/> Federal	<input type="checkbox"/> Non-Federal	
Original funds total	\$370,000.00	\$0.00	
Additional funds total	\$0.00	\$0.00	

Santaquin City, UT

Grand total	\$370,000.00		\$0.00
18. Approved Budget			
Personnel	\$0.00	Fringe Benefits	\$0.00
Travel	\$0.00	Equipment	\$0.00
Supplies	\$0.00	Contractual	\$370,000.00
Construction	\$0.00	Other	\$0.00
Total Direct Cost	\$370,000.00	Total Indirect Cost	\$0.00
		Total Non-Federal Funds	\$0.00
		Total Federal Funds Awarded	\$370,000.00
		Total Approved Budget	\$370,000.00

This agreement is subject to applicable USDA NRCS statutory provisions and Financial Assistance Regulations. In accepting this award or amendment and any payments made pursuant thereto, the undersigned represents that he or she is duly authorized to act on behalf of the awardee organization, agrees that the award is subject to the applicable provisions of this agreement (and all attachments), and agrees that acceptance of any payments constitutes an agreement by the payee that the amounts, if any, found by NRCS to have been overpaid, will be refunded or credited in full to NRCS.

Name and Title of Authorized Government Representative Timothy Wilson State Conservationist		Date 1/11/18
Name and Title of Authorized Recipient Representative Benjamin A. Reeves, City Manager	Signature  BENJAMIN A. REEVES SANTAQUIN CITY MANAGER	Date 1/11/18
Norm Beagley, City Engineer	Signature  NORM BEAGLEY, P.E.	1-11-18

NONDISCRIMINATION STATEMENT

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW., Washington, DC 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

PRIVACY ACT STATEMENT

The above statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. Section 522a).

Statement of Work

Purpose

The purpose of this agreement is for the United States Department of Agriculture, Natural Resources Conservation Service, hereinafter referred to as the "NRCS", to provide assistance to Santaquin City, Utah hereinafter referred to as the "Sponsor", for the Santaquin Supplemental Watershed Plan project, Utah County, Utah, under the Watershed Flood Prevention Operations (WFPO) Program.

Objectives

Develop a Supplemental Watershed Plan-Environmental Assessment (Plan-EA) for the Santaquin Watershed, Utah County, Utah.

This agreement currently includes funding for the planning phase and concept design phase adequate enough to develop feasible alternatives and a preferred alternative. If additional funds become available to totally complete the project through construction, an amendment will be proposed with the Sponsor. If agreed by the parties, this agreement will be amended accordingly. This agreement includes clauses for other phases that may or may not be funded.

Budget Narrative

BUDGET NARRATIVE

1. NRCS shall pay 100 percent of the costs. There is no Sponsor cost-share required.

Budget includes the following estimated costs:

Contractual \$370,000 in costs for development of a Supplemental Watershed Plan "Planning".

Planning and concept design costs are expenses incurred for surveys and investigations, environmental studies, evaluation of alternatives, and preparation of plans and design prior to the authorization of assistance for the installation of works of improvement.

Responsibilities of the Parties:

A. Sponsor will—

1. Planning must follow the policy set forth in the NRCS Title 390, National Watershed Program Manual (NWPM), Part 505, which is incorporated by reference. Sponsor may obtain a full copy of the above referenced manual at <http://directives.sc.egov.usda.gov/> or the NRCS Utah State office.

2. Design must follow the policy set forth in the NRCS National Engineering Manual Part 511. This includes obtaining all necessary permits, land rights, and easements in accordance with the policy directive section 505.36. A U.S. Army Corps of Engineers Permit 404 must be obtained prior to proceeding to construction.

3. Contract for services, as necessary, award and administer any contracts for the installation of the work for the project specified in this agreement in accordance with the Code of Federal Regulations (CFR), 2 CFR § 200.317 through 200.326, applicable state requirements, and the Sponsors' procurement regulations, as appropriate. See general terms and conditions attached to this agreement for a link to the CFR. In accordance with 2 CFR § 200.326 contracts must contain the applicable provisions described in Appendix II to Part 200. Davis-Bacon Act would not apply under this Federal program legislation.

4. The contracts for services described in this Agreement shall not be awarded to the Sponsor or to any firm in which any Sponsor's official or any member of such official's immediate family has direct or indirect interest in the pecuniary profits or contracts of such firms. Reference 2 CFR § 200.318 regarding standards of conduct covering conflicts of interest and governing the performance of its employees engaged in the selection, award, and administration of contracts.

5. Take reasonable and necessary action of all contractual and administrative issues arising out of contracts awarded under this agreement.

6. Designate a project liaison to serve between the Sponsor and NRCS and identify that person's contact information with this executed agreement. Any change in the project liaison during the term of this agreement must be immediately communicated to NRCS.

7. Pay the contractor for all services performed in accordance with the agreement and submit a SF 270, "Request for Advance and Reimbursement," to the NRCS Program/Technical Contact with all documentation to support the request. Payments will be withheld until all required documentation is submitted and complete.

8. Be responsible for all ineligible project costs. Ineligible costs are costs not referenced in this agreement. The Sponsor is also responsible for all costs in excess of the federal cost-share in this agreement.

9. Comply with the applicable requirements in the attached General Terms and Conditions of this agreement.

10. Ensure that requirements for compliance with environmental and cultural resource laws are considered for the proposed works of improvement described in this agreement.

11. Ensure the information in the System for Award Management (SAM) is current and accurate until the final financial report (SF 425) under this award or final payment is received, whichever is later.

12. Take reasonable and necessary actions to dispose of all contractual and administrative issues arising out of the contract awarded under this agreement. This includes, but is not limited to disputes, claims, protests of award, source evaluation, and litigation that may result from the project. Such actions will be at the expense of the Sponsor, including any legal expenses. The Sponsor will advise, consult with, and obtain prior written concurrence of NRCS on any litigation matters in which NRCS could have a financial interest.

13. Sponsor must indemnify and hold NRCS harmless to the extent permitted by State law for any costs, damages, claims, liabilities, and judgments arising from past, present, and future acts or omissions of the Sponsor in connection with its acquisition and management of the Watershed Flood Prevention Operations Program pursuant to this project agreement. Further, the Sponsor agrees that NRCS will have no responsibility for acts and omissions of the Sponsor, its agents, successors, assigns, employees, contractors, or lessees in connection with the acquisition and management of the Watershed Flood Prevention Operations Program pursuant to this project agreement that result in violation of any laws and regulations that are now or that may in the future become applicable.

14. Be liable to the NRCS for damages sustained by the NRCS as a result of the contractor failing to complete the work within the specified time. The damages will be based upon the additional costs incurred by the NRCS resulting from the contractor not completing the work within the allowable performance period. These costs include but are not limited to personnel costs, travel, etc. The NRCS will have the right to withhold such amount out of any monies that may be then due or that may become due and payable to the Sponsor. This liability is not applicable to the extent that the contract performance time is extended by court judgment unless such judgment results from actions of the Sponsor not concurred in by NRCS.

15. Take necessary legal action, including bringing suit, to collect from the contractor any monies due in connection with the contract, or upon request of NRCS, assign and transfer to NRCS any or all claims, demands, and causes of action of every kind whatsoever that the Sponsor has against the contractor or his or her sureties.

16. Retain all records dealing with the award and administration of the contract for 3 years from the date of the Sponsor's submission of the final request for reimbursement or until final audit findings have been resolved, whichever is longer. If any litigation is started before the expiration of the 3-year period, the records are to be retained until the litigation is resolved or the end of the 3-year period, whichever is longer. Make such records available to the Comptroller General of the United States or his or her duly authorized representative and accredited representatives of the Department of Agriculture or cognizant audit agency for the purpose of making audit, examination, excerpts, and transcriptions.

B. NRCS will—

1. Review and concur with the watershed plan, concept design and all other contract documents developed for or by the Sponsor.

2. Designate a Government representative (GR) to serve as liaison with the Sponsor and identify that person's contact information with this executed agreement.

3. Provide authorized assistance such as, but not limited to, estimates of contract costs, length of contract period, results of tests and studies as available, site investigations, design and layout, and drawings and specifications, as requested by the Sponsor, and as its resources permit.

4. Consult with the Sponsor as requested in preparing the solicitation and awarding and administering the contract.
5. Make payment to the Sponsor covering the NRCS's share of the cost upon receipt and approval of SF-270, withholding the amount of damages sustained by NRCS as provided for in this agreement.

C. SPECIAL PROVISIONS:

1. The furnishing of financial, administrative, and/or technical assistance above the original funding amount by NRCS is contingent on there being sufficient unobligated and uncommitted funding in the Watershed Flood Prevention Operations Program that is available for obligation in the year in which the assistance will be provided. NRCS may not make commitments in excess of funds authorized by law or made administratively available. Congress may impose obligational limits on program funding that constrains NRCS's ability to provide such assistance.
2. NRCS, at its sole discretion, may refuse to cost share should the Sponsor, in administering the contract, elect to proceed without obtaining concurrences described in this agreement.

Expected Accomplishments and Deliverables

Sponsor will—

1. Prepare a watershed plan; prepare concept design and drawings in accordance with standard engineering principles that comply with NRCS programmatic requirements. The Sponsor must ensure each description of the work described in this agreement is reviewed, concurred, and approved by NRCS. Sponsor must not move to the next project work described in this agreement until the prior work is concurred and approved by NRCS.
2. Provide NRCS with a copy of all solicitation and request for bids documents prior to release, as well as all awarded contracts and contract modifications.
3. The sponsor must provide NRCS with documentation of the actual cost incurred for the services acquired.
4. Appoint a contracting officer and an authorized representative who will have authority to act for the contracting officer, listing their duties, responsibilities, and authorities. Furnish such information in writing to the NRCS State Conservationist.
5. Provide copies of site maps to appropriate Federal and State agencies for environmental review. Notify NRCS of environmental clearance, or any unresolved concerns.
6. Dispose of all claims resulting from the contract; secure prior written concurrence of the State Conservationist if NRCS funds are involved.

Resources Required

No other resources required other than funding.

Milestones

TASK: Public Participation - ESTIMATED START: February 2018 - ESTIMATED COMPLETION: March 2018

TASK: Site Data Collection - ESTIMATED START: February 2018 - ESTIMATED COMPLETION: April 2018

TASK: Conceptual Design Alts - ESTIMATED START: April 2018 - ESTIMATED COMPLETION: May 2018

TASK: Draft Plan-EA for NRCS Review - ESTIMATED START - June 2018 - ESTIMATED COMPLETION - July 2018

TASK: Draft Plan-EA for NWMC & NHQ Review - ESTIMATED START - July 2018 - ESTIMATED COMPLETION - September 2018

TASK: Public meeting & Interagency Comments - ESTIMATED START - September 2018 - ESTIMATED COMPLETION

- October 2018

TASK: Final Plan-EA - ESTIMATED START - September 2018 - ESTIMATED COMPLETION - November 2018

TASK: Final Plan-EA submitted for Authorization - ESTIMATED START -December 2018 - ESTIMATED COMPLETION
- February 2019

GENERAL TERMS AND CONDITIONS

Please reference the below link(s) for the General Terms and Conditions pertaining to this award:

NATURAL RESOURCES CONSERVATION SERVICE U.S. DEPARTMENT OF AGRICULTURE

GENERAL TERMS AND CONDITIONS GRANTS AND COOPERATIVE AGREEMENTS

I. APPLICABLE REGULATIONS

a. The recipient, and recipients of any subawards under this award, agree to comply with the following regulations, as applicable. The full text of Code of Federal Regulations references may be found at <https://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR> and <http://www.ecfr.gov/>.

(1) 2 CFR Part 25, "Universal Identifier and System of Award Management" (2) 2 CFR Part 170, "Reporting Subaward and Executive Compensation Information" (3) 2 CFR Part 180, "OMB Guidelines To Agencies On Governmentwide Debarment And Suspension (Nonprocurement)" (4) 2 CFR Part 182, "Governmentwide Requirements for Drug-Free Workplace (Financial Assistance)" (5) 2 CFR Part 200, "Uniform Administrative Requirements, Cost Principles, And Audit Requirements for Federal Awards"

b. The recipient, and recipients of any subawards under this award, assure and certify that they have and/or will comply with the following regulations, as applicable. The full text of Code of Federal Regulations references may be found at <https://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR> and <http://www.ecfr.gov/>.

(1) 2 CFR Part 175, "Award Term for Trafficking in Persons" (2) 2 CFR Part 417, "Nonprocurement Debarment and Suspension" (3) 2 CFR Part 418, "New Restrictions on Lobbying" (4) 2 CFR Part 421, "Requirements for Drug-Free Workplace (Financial Assistance)"

c. Allowable project costs will be determined in accordance with the authorizing statute, the purpose of the award, and to the extent applicable to the type of organizations receiving the award, regardless of tier. The following portions of the Code of Federal Regulations are hereby incorporated by reference. The full text of Code of Federal Regulations references may be found at <https://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR> and <http://www.ecfr.gov/>.

(1) 2 CFR Part 200, "Uniform Administrative Requirements, Cost Principles And Audit Requirements For Federal Awards" (2) 48 CFR Part 31, "Contract Cost Principles and Procedures"

II. UNALLOWABLE COSTS

The following costs are not allowed:

a. Costs above the amount authorized for the project b. Costs incurred after the expiration of the award including any no-cost extensions of time c. Costs that lie outside the scope of the approved project and any amendments thereto d. Compensation for injuries to persons or damage to property arising from project activities

This list is not exhaustive. For general information about the allowability of particular items of costs, please see 2 CFR Part 200, "Subpart E – Cost Principles", or direct specific inquiries to the NRCS administrative contact identified in the award.

III. CONFIDENTIALITY

a. Activities performed under this award may involve access to confidential and potentially sensitive information about governmental and landowner issues. The term "confidential information" means proprietary information or data of a personal nature about an individual, or information or data submitted by or pertaining to an organization. This information must not be disclosed without the prior written consent of NRCS.

b. The recipient's personnel will follow the rules and procedures of disclosure set forth in the Privacy Act of 1974, 5 U.S.C. Section 552a, and implementing regulations and policies with respect to systems of records determined to be subject to the Privacy Act. The recipient's personnel must also comply with privacy of personal information relating to natural resources conservation programs in accordance with section 1244 of Title II of the Farm Security and Rural Investment Act of 2002 (Public Law 107-171).

c. The recipient agrees to comply with NRCS guidelines and requirements regarding the disclosure of information protected under Section 1619 of the Food, Conservation, and Energy Act of 2008 (PL 110-246), U.S.C. 8791.

d. The recipient agrees to comply with the "Prohibition Against Certain Internal Confidentiality Agreements:"

1. You may not require your employees, contractors, or subrecipients seeking to report fraud, waste, or abuse to sign or comply with internal confidentiality agreements or statements prohibiting or otherwise restricting them from lawfully reporting that waste, fraud, or abuse to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information. 2. You must notify your employees, contractors, or subrecipients that the prohibitions and restrictions of any internal confidentiality agreements inconsistent with paragraph (1) of this award provision are no longer in effect. 3. The prohibition in paragraph (1) of this award provision does not contravene requirements applicable to any other form issued by a Federal department or agency governing the nondisclosure of classified information. 4. If NRCS determines that you are not in compliance with this award provision, NRCS: a. Will prohibit your use of funds under this award, in accordance with sections 743 and 744 of Division E of the Consolidated Appropriations Act, 2016, (Pub. L. 114-113) or any successor provision of law; b. May pursue other remedies available for your material failure to comply with award terms and conditions.

IV. PRIOR APPROVAL REQUIREMENTS

The following are the most common situations requiring prior approval. However, the recipient is also bound by any other prior approval requirements of the applicable administrative provisions and Federal cost principles.

a. Purpose or Deliverables.—When it is necessary for the recipient to modify the purpose or deliverables, the recipient must submit a written request and justification for the change along with the revised purpose or deliverables of the award to the NRCS administrative contact. The request should contain the following: 1. Grant or agreement number 2. Narrative explaining the requested modification to the project purpose or deliverables 3. A description of the revised purpose or deliverables 4. Signatures of the authorized representative, project director, or both

b. Subaward/contractual Arrangement.—The recipient must submit a justification for the proposed subaward/contractual arrangements, a statement of work to be performed, and a detailed budget for the subaward/contract to the NRCS administrative contact. Subaward/contractual arrangements disclosed in the application do not require additional postaward approval.

c. Absence or Change in Project Leadership.—When a project director or the person responsible for the direction or management of the project—

1. Relinquishes active direction of the project for more than 3 consecutive months or has a 25 percent or more reduction in time devoted to the project, the grantee must notify the NRCS administrative contact in writing, identifying who will be in charge during the project director's absence. The notification must include the qualifications and the signature of the replacement, signifying his or her willingness to serve on the project.

2. Severs his or her affiliation with the grantee, the grantee's options include— i. Replacing the project director. The grantee must request written approval of the replacement from the NRCS administrative contact and must include the qualifications and the signature of the replacement signifying his or her willingness to serve on the project. ii. Subcontracting to the former project director's new organization. The grantee must request approval from the administrative contact to replace the project manager and retain the award, and to subcontract to the former project director's new organization certain portions of the project to be completed by the former project director. iii. Relinquishing the award. The grantee must submit to the NRCS administrative contact a signed letter by the grantee and the project director that indicates that the grantee is relinquishing the award. The letter must include the date the project director is leaving and a summary of progress to date. A final Standard Form (SF) 425 reflecting the total amount of funds spent by the recipient must be attached to the letter.

3. Transfers the award to his or her new organization, the authorized organization's representative at the new organization must submit the following to the NRCS administrative contact as soon as the transfer date is firm and the amount of funds to be transferred is known: i. The forms and certifications included in the application package ii. A project summary and work statement covering the work to be completed under the project (deliverables and objectives must be the same as those outlined in the approved proposal) iii. An updated qualifications statement for the project director showing his or her new organizational affiliation iv. Any cost-sharing requirements under the original award transfer to the new institution; therefore, cost-sharing information must be included in the proposal from the new organization

Note: The transfer of an award from one organization to another can take up to 90 calendar days to accomplish, which may result in a delay in the project director resuming the project at the new organization.

d. Budget Revisions.—Budget revisions will be in accordance with 2 CFR Part 200.308.

e. No-Cost Extensions of Time.—When a no-cost extension of time is required, the recipient must submit a written request to the NRCS administrative contact no later than 30 calendar days before the expiration date of the award. The request must contain the following: The length of additional time required to complete the project and a justification for the extension. A summary of progress to date. An estimate of funds expected to remain unobligated on the scheduled expiration date. A projected timetable to complete the portions of the project for which the extension is being requested. Signature of the grantee and the project director. A status of cost sharing to date (if applicable).

Note: An extension will not exceed 12 months. Requests for no-cost extensions received after the expiration of the award will not be granted. V. PAYMENTS

a. Payment by NRCS to the entity will be made monthly or quarterly (whichever is mutually agreed upon by both parties) on a reimbursable or advanced basis upon completion of work outlined herein. Payment will be executed upon the submission of a properly executed form SF-270 with supporting documentation. The SF-270 must cite the agreement number, remittance address, and billing period. The SF-270 must be sent to the NRCS administrative contact at the email address identified in block 8 of the Notice of Grant/Agreement Award.

b. Unless otherwise specified in the award, the recipient must receive payments through electronic funds transfers.

c. Recipients requesting advances should request payments in amounts necessary to meet their current needs pursuant to procedures contained in the Federal administrative provisions and 31 CFR Part 205.

d. The method of payment between the recipient and its contractors will be in accordance with the policies and procedures established by the recipient except that the contractors may not use the USDA Office of Financial Management/National Finance Center method to request payments. If the grantee makes advance payments to contractors, the grantee must ensure that the timing of such payments is designed to minimize elapsed time between the advance payment and the disbursement of funds. Payment requests from the grantee's contractors will not be sent to NRCS for review or approval.

e. Accounting records for all costs incurred under this award must be supported by source documentation. Such documentation includes, but is not limited to, canceled checks, paid bills, payroll records, and subaward documents. Labor cost charges to this award must be based upon salaries actually earned and the time actually worked on this award. All project costs must be incurred within the approved project period of this award, including any approved no-cost extension of time. Costs that cannot be supported by source documentation or that are incurred outside of the approved project period and budget may be disallowed and may result in award funds being returned to the Federal Government by the recipient.

VI. ACCRUALS

a. Recipients must submit an accrual estimate to the NRCS Program/Technical no later than 15 calendar days prior to the end of the quarter (submit by March 15, June 15, September 15 and December 15th). b. An accrual represents the value of goods or services provided to NRCS for which you have not requested payment. The quality and completeness of NRCS audited financial statements depends on your continuing cooperation and timely information. c. At a minimum, the signed accrual statement should include, "Under agreement number _____, at the close of the quarter ending _____, we have provided or anticipate providing goods or services that we have not requested payment for in the amount of \$_____." Include the name and title of the person preparing the accrual estimate.

VII. FINANCIAL REPORTING

a. Recipients must submit a Federal Financial Report (FFR), SF 425 and 425A, in accordance with the following schedule:

Quarterly Schedule Report Due Date
October 1 to December 31 January 31 January 1 to March 31 April 30 April 1 to June 30 July 31 July 1 to September 30 October 31

Reports must be submitted on an accrual accounting basis. Failure to submit reports in accordance with the above schedule may result in suspension or termination of award.

b. A final Report must be submitted no later than 90 calendar days after the completion of the award. For final FFRs, reporting end date must be the end date of the project or agreement period. The reports should be submitted to the NRCS administrative contact identified in award notifications.

VIII. PERFORMANCE MONITORING AND REPORTING

a. The recipient is responsible for monitoring day-to-day performance and for reporting to NRCS. If the project involves subaward arrangements, the recipient is also responsible for monitoring the performance of project activities under those arrangements to ensure that approved goals and schedules are met.

b. Every 6 months the recipient must submit a written progress report. Each report must cover— 1. A comparison of actual accomplishments with the goals and objectives established for the reporting period and, where project output can be quantified, a computation of the costs per unit of output.

2. The reasons why goals and objectives were not met, if appropriate.

3. Additional pertinent information including, where appropriate, analysis and explanation of cost overruns or high unit cost.

c. The recipient must submit a final performance report within 90 calendar days after completion of project.

IX. AUDIT REQUIREMENTS

The recipient is responsible for complying with audit requirements in accordance with 2 CFR 200, Subpart F. A non-Federal entity that expends \$750,000 or more during the non-Federal entity's fiscal year in Federal awards must have a single or program-specific audit conducted for that year.

X. SPECIAL PROVISIONS

a. The recipient assures and certifies that it will comply with the minimum-wage and maximum-hour provisions of the Federal Fair Labor Standards Act.

b. Employees of NRCS will participate in efforts under this agreement solely as representatives of the United States. To this end, they may not participate as directors, officers, employees, or otherwise serve or hold themselves out as representatives of the recipient. They also may not assist the recipient with efforts to lobby Congress or to raise money through fundraising efforts. Further, NRCS employees must report to their immediate supervisor any negotiations with the recipient concerning future employment and must refrain from participation in efforts regarding such parties until approved by the agency.

c. Employees of the recipient will not be considered Federal employees or agents of the United States for any purposes under this agreement.

XI. PATENTS, INVENTIONS, COPYRIGHTS, AND ACKNOWLEDGMENT OF SUPPORT AND DISCLAIMER

a. Allocation of rights of patents, inventions, and copyrights must be in accordance with 2 CFR Part 200.315. This regulation provides that small businesses normally may retain the principal worldwide patent rights to any invention developed with USDA support.

b. In accordance with 37 CFR Section 401.14, each subject invention must be disclosed to the Federal agency within 2 months after the inventor discloses it in writing to contractor personnel responsible for patent matters. Invention disclosure statements pursuant to 37 CFR Section 401.14(c) must be made in writing to:

Acquisitions Division Grants and Agreements Services Branch 1400 Independence Avenue, SW. Room 6823 South Building Washington, DC 20250

c. USDA receives a royalty-free license for Federal Government use, reserves the right to require the patentee to license others in certain circumstances, and requires that anyone exclusively licensed to sell the invention in the United States must manufacture it domestically.

d. The following acknowledgment of NRCS support must appear in the publication of any material, whether copyrighted or not, and any products in electronic formats (World Wide Web pages, computer programs, etc.) that is substantially based upon or developed under this award:

• "This material is based upon work supported by the Natural Resources Conservation Service, U.S. Department of Agriculture, under number [recipient should enter the applicable award number here]."

In addition, all publications and other materials, except scientific articles or papers published in scientific journals, must include the following statement:

• "Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the U.S. Department of Agriculture."

e. All publications printed with Federal Government funds will include the most current USDA nondiscrimination statement, available from the Public Affairs Division, Civil Rights Division, or on the USDA and NRCS home pages. If the material is too small to permit the full nondiscrimination statement to be included, the material must, at a minimum, include the statement:

• "USDA is an equal opportunity provider and employer." Any publication prepared with funding from this agreement must include acknowledgement to USDA, Natural Resources Conservation Service."

The recipient is responsible for ensuring that an acknowledgment of NRCS is made during news media interviews, including popular media such as radio, television, and news magazines, that discuss in a substantial way work funded by this award.

XII. COST-SHARING REQUIREMENTS

a. If the award has specific cost-sharing requirements, the cost-sharing participation in other projects may not be counted toward meeting the specific cost-share requirement of this award, and must come from non-Federal sources unless otherwise stated in the applicable program announcement.

b. Should the recipient become aware that it may be unable to provide the cost-sharing amount identified in this award, it must— 1. Immediately notify the NRCS administrative contact of the situation. 2. Specify the steps it plans to take to secure replacement cost sharing. 3. Indicate the plans to either continue or phase out the project in the absence of cost sharing.

c. If NRCS agrees to the organization's proposed plans, the recipient will be notified accordingly. If the organization's plans are not acceptable to NRCS, the award may be subject to termination. NRCS modifications to proposed cost sharing revisions are made on a case-by-case basis.

d. Failure by the recipient to notify NRCS in accordance with paragraph (b) above may result in the disallowance of some or all the costs charged to the award, the subsequent recovery by NRCS of some of the NRCS funds provided under the award, and possible termination of the award, and may constitute a violation of the terms and conditions of the award so serious as to provide grounds for subsequent suspension or debarment.

e. The recipient must maintain records of all project costs that are claimed by the recipient as cost sharing as well records of costs to be paid by NRCS. If the recipient's cost participation includes in-kind contributions, the basis for determining the valuation for volunteer services and donated property must be documented.

XIII. PROGRAM INCOME

Income derived from patents, inventions, or copyrights will be disposed of in accordance with the recipient's own policies. General program income earned under this award during the period of NRCS support must be added to total project funds and used to further the purpose and scope of this award or the legislation under which this award is made.

XIV. NONEXPENDABLE EQUIPMENT

Recipients purchasing equipment or products with funds provided under this award are encouraged to use such funds to purchase only American-made equipment and products. Title to nonexpendable equipment purchased with award funds will vest in the recipient upon completion of the award project and acceptance by NRCS of required final reports. When equipment is no longer needed by the recipient and the per-unit fair market value is less than \$5,000, the recipient may retain, sell, or dispose of the equipment with no further obligation to NRCS. However, if the per-unit fair market value is \$5,000 or more, the recipient must submit a written request to the NRCS administrative contact for disposition instructions.

XV. LIMIT OF FEDERAL LIABILITY

The maximum financial obligation of NRCS to the recipient is the amount of funds indicated in the award as obligated by NRCS. However, in the event that an erroneous amount is stated on the approved budget, or any supporting document relating to the award, NRCS will have the unilateral right to make the correction and to make an appropriate adjustment in the NRCS share of the award to align with the Federal amount authorized.

XVI. MODIFICATIONS AND TERMINATIONS

NRCS may amend or modify the award through an exchange of correspondence between authorized officials of the recipient and NRCS. The award is subject to termination if NRCS determines that the recipient has failed to comply with the terms and conditions of the award. In the event that the award is terminated, the financial obligations of the parties

will be those set forth in 2 CFR Part 200.339.

XVII. AWARD CLOSEOUT

Award closeout is the process by which NRCS determines that all required project activities have been performed satisfactorily and all necessary administrative actions have been completed.

1. The furnishing of financial, administrative, and/or technical assistance above the original funding amount by NRCS is contingent on there being sufficient unobligated and uncommitted funding in the Watershed Flood Prevention Operations Program that is available for obligation in the year in which the assistance will be provided. NRCS may not make commitments in excess of funds authorized by law or made administratively available. Congress may impose obligational limits on program funding that constrains NRCS's ability to provide such assistance.
2. NRCS, at its sole discretion, may refuse to cost share should the Sponsor, in administering the contract, elect to proceed without obtaining concurrences described in this agreement.