Memorandum

To: Idaho Water Resource Board

From: Cynthia Bridge Clark

Date: September 9, 2013

Re: Status of Ongoing Storage Water Studies

The following is a status report on the water storage studies initiated by the Idaho Water Resource Board (IWRB). This memorandum describes progress since the last IWRB meeting in July 2013.

Weiser-Galloway Project

Weiser River Geologic Investigation and Analysis Project (Geologic Investigation):

- The final report for the Geologic Investigation is scheduled for completion by the end of September 2013. Due to the location of the IWRB's September meeting, a presentation of the final study results by the US Corps of Engineers (Corps) will be provided at the November IWRB meeting in Boise, Idaho.
- Results indicate that a safe dam can be engineered and constructed at the site. The report will document technical issues that should be considered for final feasibility design and construction and will provide a revised cost estimate for the project.

Snake River Operational Analysis Project (Operational Analysis):

- The Corps continues to refine the riverware model for the Weiser River basin, and perform hydraulic, economic and cost analyses for the project.
- IDWR and Idaho Power Company (IPC) are updating the Snake River Planning Model and coordinating the exchange of input data with the Corps. A series of operating scenarios for the Weiser-Galloway project will be modeled in conjunction with Snake River System using the planning model.
- Completion of the Operational Analysis is scheduled for spring 2014. An update will be provided to the IWRB at the November IWRB meeting.

REQUIRED ACTIONS: No action is required by the IWRB at this time.

Boise River Feasibility Study

- At the July IWRB meeting, the Corps reported that approximately $125,000 was secured to advance the feasibility study in federal fiscal year 2013 ($250,000 total including the IWRB's match of approximately $100,000 remaining in-kind credit and $25,000 cash). The Corps' new planning initiative requires re-scoping of the Boise River study to meet a 3-year study schedule, $3 million maximum budget, and involvement of the Corps' three levels of management to provide continuity throughout the study process ("3x3x3" framework). Modification of the federal cost share agreement (FCSA) between the IWRB and the Corps is required as well as a revised project management plan (PMP).
- The FCSA clarifies the IWRB's cost share commitment including the projected in-kind contributions. The PMP documents the general issues and basis for the feasibility study, and outlines the general tasks, schedule, process for study execution and scope of work by discipline. The Corps will present proposed

modifications to the FCSA, a draft PMP, and proposed schedule for execution of the agreement at the September 20, 2013 IWRB meeting.

- Preliminary hydraulic, economic and other technical analyses are currently being performed to provide additional information about the measures identified for study. This information will be used to refine the scope of the study moving forward. The Corps also will provide an update on these activities at the September IWRB meeting.
- The Corps provided a summary of project tasks and discussed the feasibility study process at the Water Storage Projects Committee meeting on August 8, 2013.
- The Corps is seeking general endorsement of the draft FCSA and PMP prior to forwarding the agreement to Corps Headquarters for additional review. Execution of the revised agreement is desired as soon as possible to improve the likelihood of continued federal funding of the study.
- On August 23, 2013 the several IWRB members and staff participated in a tour of key locations on the Boise River. The tour was organized by the Corps at the request of Senator Risch's office. The focus of the tour was the feasibility study and specific issues related to water supply and flood risk.

REQUIRED ACTIONS: No official action is required by the IWRB at this time. However, staff request the IWRB consider initial approval of a draft FCSA and PMP, and authorize the Corps to move the agreement forward for review by Corps Headquarters.

Henrys Fork Basin Study

- On August 8, 2013, the IWRB's Water Storage Projects Committee toured the parts of the Henrys Fork River basin and viewed several of the surface water storage sites evaluated in the study as well as the Egin Lakes recharge site. The committee held a meeting in the evening to further discuss the progress and anticipated conclusion of the study.
- The appraisal level analysis is ongoing and is focused on generating additional technical information about a few of the surface water storage and non-structural water management alternatives. Basin hydrologic modeling is also ongoing to assist with the analysis of the effects of each alternative, clarify the amount of water available for storage, and evaluate climate change scenarios.
- Reclamation and IDWR continue to meet with stakeholders to discuss in detail which alternatives have technical promise and public support.
- The study is scheduled to be completed around December 2013. A proposal to draft a companion document to the final Basin Study report was discussed with the Water Storage Projects Committee and will be discussed with a smaller group of stakeholders. The purpose of the supplemental report would be to provide recommendations and prioritization of projects to pursue along with a possible path forward. The document would be developed by the IWRB in collaboration with Reclamation and a small group of stakeholders. The information contained in the report could then be used by the State of Idaho to inform decisions regarding projects to pursue. It would not preclude other entities from pursuing any of the projects evaluated in the Basin Study.
- Results of the appraisal analysis, a draft of the Basin Study report, and drafts of the supplemental report and corresponding recommendations will be presented to the IWRB during the next several IWRB meetings for review and comment.

REQUESTED ACTIONS: No action is required by the IWRB at this time.

DRAFT

Framework for a Path Forward Following the Henrys Fork Basin Study

The Bureau of Reclamation (Reclamation) and the Idaho Water Resource Board (IWRB) entered into a partnership under the auspices of Reclamation's Basin Study program. The Basin Study program objectives seek to identify adaptation and mitigation strategies to resolve water supply imbalances and to preserve ecological resiliency. The Henrys Fork Basin Study (HFBS) focuses on identifying opportunities for developing water supplies, improving water management, and sustaining environmental quality.

The IWRB through the HFBS seek to support and advance the development of additional water supply to be used to help achieve the goal of stabilizing the Eastern Snake Plain Aquifer (ESPA) as established by the State of Idaho through the ESPA Comprehensive Aquifer Management Plan (ESPA CAMP), and the State Water Plan.

Throughout the Study, multiple parties have expressed interest in identifying and implementing feasible water management strategies, including Friends of the Teton River, Henrys Fork Foundation, Fremont Madison Irrig

ation District, Trout Unlimited, IWRB, and Reclamation. This diverse group of stakeholders including environmental groups, irrigators, other interested organizations, and Federal, State, and local agencies has regularly contributed to the HFBS, primarily through their participation in the Henrys Fork Watershed Council (HFWS), which provided the forum for HFBS input and feedback.

The stakeholder groups acknowledge their diverse goals, but seem willing to consider that all may benefit if a comprehensive set of alternatives is packaged together. There is a general understanding that a broadly supported package will receive greater Federal, State, and local support which may facilitate broader avenues for implementation.

At the inception of the HFBS the stakeholder group facilitated by The HF Basin Team (CH2MHill, Reclamation, IDWR) evaluated an array of adaptation strategies, including potential storage projects, to address current and future water needs within the Henrys Fork and the Eastern Snake Plain Aquifer. These strategies represent a wide variety of water management and storage options that are not directly comparable to each other, and in some cases could be complimentary to each other. The adaptation strategies fall into several key areas: Water storage; Water markets; Water conservation; and Recharge. The

HFBS Report will document viable alternatives in each of the key areas which represent a set of adaptation strategies to address future water supply needs. The HFBS will also report on the extent to which many of these strategies are being enacted by many of the parties to achieve water management goals.

The viable adaptation strategies are quite broad in scope with far too many options to act upon immediately, therefore the HF Basin Team discussed with the stakeholders about bringing some of these alternatives together in a smaller package that has broad stakeholder support for moving forward to implementation or further study. It was originally thought that this smaller supportable package could be part of the HFBS Report. This was the genesis of the small workgroup meetings. In the first small workgroup meeting it became apparent that bringing the State and the conservation groups together regarding a smaller supportable package would be a challenge given the amount of time we have to complete the HFBS. It was in a HF Basin Team debriefing meeting after this first workgroup meeting that the concept of two documents emerged.

The first document would meet the requirements of the Basin Study program, be called the Henrys Fork Basin Study Report and include: an assessment of the water supply and demands including climate change risks; an analysis of how existing infrastructure and operations will perform in response to changing water realities; identification and evaluation of viable adaptations strategies to improve operation and infrastructure to supply adequate water supply in the future; and a tradeoff analysis of all viable adaptation strategies identified (comparison of cost, environmental impacts, risks, contribution to meeting water needs, stakeholder response, or other attributes). In addition the document would identify possible steps, approaches or programs that could move the solutions forward toward implementation.

- The HFBS Report would be developed by Reclamation in collaboration with its partner IWRB and with stakeholder input.
- The HFBS Report will be submitted to Reclamation's Basin Study program for final approval.
- The HFBS Report would meet the current time frame for completion of the Basin Study (December 2013).
- The HFBS Report would be fact based and technically sound.
- The HFBS Report would document the extent to which the various water management strategies that were identified in the HFBS are being utilized to achieve water management goals.
- The HFBS Report document would NOT include recommendations.

Recognizing that the array of viable adaptation strategies in the Henry's Fork Basin Study Report are quite broad in scope with far too many options to act upon immediately, the second document would summarize the HFBS Report, provide recommendations and prioritization for which options to pursue, and outline the sequence of steps for the recommended options. The second document (potentially called the Path Forward) would be developed by the State in collaboration with the small work group and Reclamation and be formulated to achieve broad stakeholder support.

- The Path Forward document would be a report issued by Idaho Water Resource Board as a companion document to the Basin Study Report and reference the Basin Study Report.
- Reclamation's role in the Path Forward document would be as a collaborator.
- It is hoped that the Path Forward document could represent broad stakeholder support backed by the workgroup participants and the HFWC.
- A Path Forward document would provide flexibility for the IWRB to select some grouping of alternatives to be pursued for implementation.
- The Path Forward document will be submitted to the Governor and the Legislature to comply with House Joint Memorial 8, Senate Bill 1511, and the Idaho State Water Plan.
- The Path Forward document, and the recommendations and prioritization contained in the document, would be used by the State of Idaho to inform decisions regarding which options to pursue.
- The Path Forward document, and the recommendations and prioritization contained in the document, would be used by the State of Idaho to inform decisions regarding investments in water management infrastructure.
- The Path Forward document, and the recommendations and prioritization contained in the document, would be used by the State of Idaho to seek further federal support to help implement options identified in the HFBS.

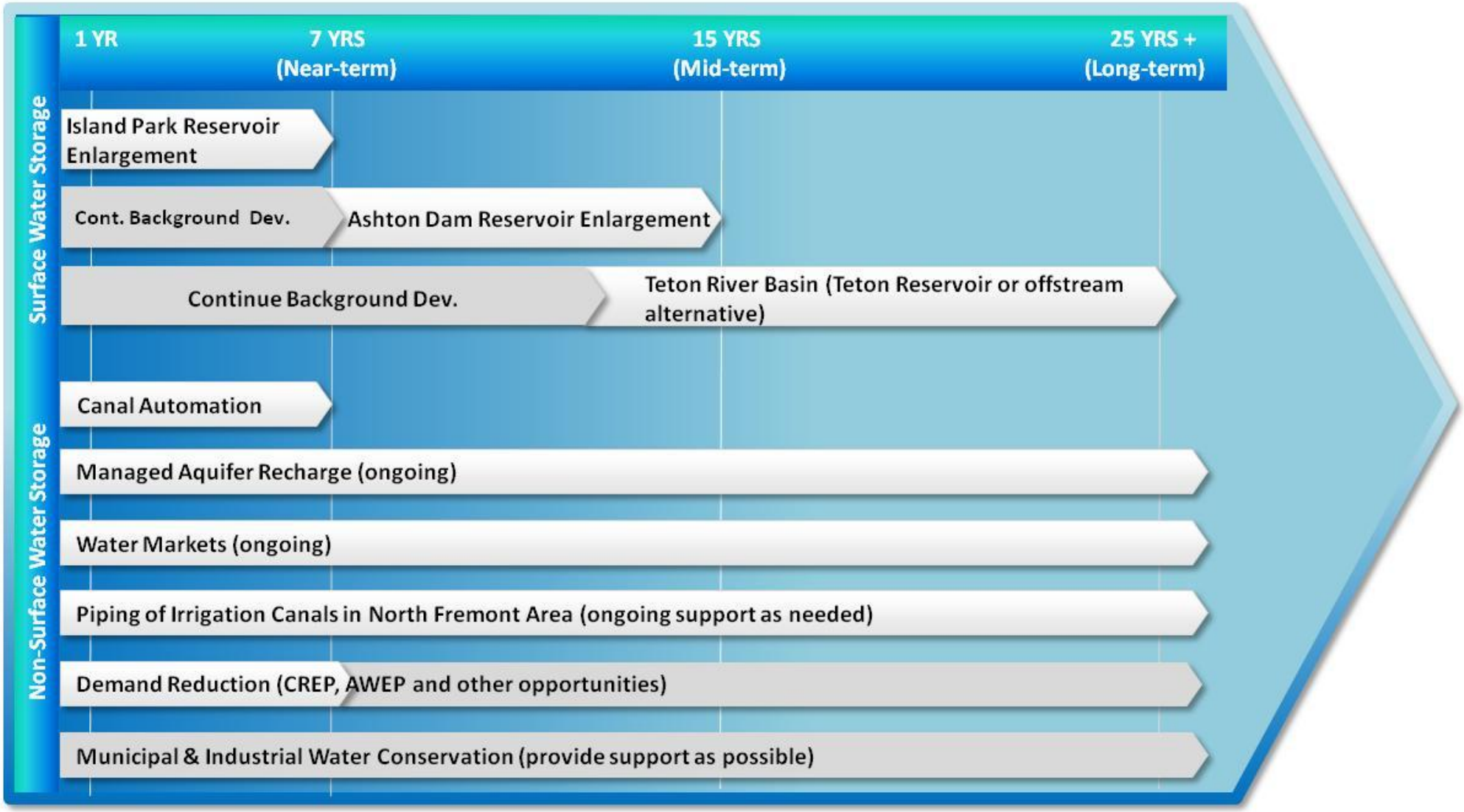
A Path Forward document does not preclude any member of the workgroup from independently developing its own vision for a path forward. Since the Study will present an array of alternatives, any person or group, private or public, may seek to move an alternative(s) forward as they deem appropriate.

Idaho Water Resource Board
Henrys Fork Basin Study Path Forward
Draft Recommendations and Prioritization of Options

Surface Water Storage Options	Non-Surface Water Storage Options
Near-Term Completion – Years 1-7 • Island Park Reservoir Enlargement – pursue up to 29,000 AF expansion of storage in Island Park reservoir by converting maximum cost-effective amount of flood surcharge space into storage space. Mid-Term Completion - Years 8-25 • Ashton Reservoir Enlargement – pursue up to 20,000 AF enlargement of Ashton Reservoir *if* Power Company is willing to cooperate. Background work on this option would take place while pursuing the Island Park Reservoir Enlargement. Long-Term Completion – Beyond 25 years • Teton River Basin alternative – maintain Teton Reservoir or offstream alternative (Lane Lake or Upper Badger sites) as a long-range placeholder for future consideration on the Teton River. Background work may take place while pursuing near-term and mid-term options.	Near-Term Completion – Years 1-7 • Canal Automation – IWRB will support canal automation efforts to install automation systems by offering loan dollars to FMID or individual canal companies for automation projects, and support FMID or canal company applications for federal cost-share funds for automation. Currently Ongoing and Continuous • Managed Aquifer Recharge – IWRB will continue the managed aquifer recharge program consistent with the goals set in ESPA Comprehensive Aquifer Management Plan, the State Water Plan, and the Swan Falls Re-Affirmation Agreement. Continue to prioritize recharge locations based on achieving stabilization of ESPA, meeting state's obligations under Swan Falls Agreement, surface water availability for recharge within the water administration system, non-interference with optimal capture of water in surface water reservoirs, availability of willing partners with water delivery systems in priority areas, and avoidance of significant environmental impacts. Develop additional managed recharge infrastructure in priority locations. • Water Markets – State will continue the existing water market programs: the Upper Snake Rental Pool for storage water and the Water Supply Bank for natural flow and ground water. Modifications to these programs are continuously being considered through the appropriate venues. • Piping of Irrigation Canals in North Fremont Area - IWRB will continue to assist North Fremont Area water users with their continuing project to pipe their irrigation canals with financial and technical support from IWRB and NRCS. • Demand Reduction – IWRB will continue to promote existing demand reduction programs including the CREP program and the AWEP Endgun Removal Program, both developed in partnership with USDA. • Municipal & Industrial Water Conservation – State will continue to encourage municipal water conservation and improvement projects through loan funds available through the IWRB and the IDEQ.

Henrys Fork Basin Study Path Forward

Draft Recommendations and Prioritization of Options
Timeline for Completion



Amendments to the

FEASIBILITY COST SHARE AGREEMENT
BETWEEN
THE DEPARTMENT OF THE ARMY
AND
IDAHO DEPARTMENT OF WATER RESOURCES
FOR THE
BOISE RIVER STUDY
BOISE, IDAHO

All of the proposed amendments to the previously approved Feasibility Cost Share Agreement for the study are shown below. An electronic copy of the feasibility cost share agreement with track changes is available to augment the deviation report review process.

Page No./ Article	Deviation (from Previously Approved Model FCSA)	Justification
Pages 1-16	Removed all references to *interim* study.	*Interim* term was used in the previous study as a deviation from the standard to denote that this was not a full-fledged feasibility study under the previous scope of work. Following a SMART planning re-scoping charette, the scope nowencompasses a full feasibility study and the "interim"term can be removed. This brings the FCSA better in line with the model FCSA.
Pages 1-16	Remove all references to *pre-agreement* in kind contributions including non model WHEREAS clauses on pages 1-2 and Article I.L on page 4: WHEREAS, Section 4038 of the Water Resources Development Act of 2007, Public Law 110-114, authorizes the Secretary of the Army to credit toward the non-Federal share of the cost of the study the cost, not to exceed $500,000, of work carried out by the non-Federal interest before the date of the partnership agreement for the project if the Secretary of	Previous wording referred to credit authorized by Congress to the Sponsor for pre-Agreement work that was determined to be integral to the study. This credit was exhausted during the "interim" phase of the project and references

Page No./ Article	Deviation (from Previously Approved Model FCSA)	Justification
	the Army determines that the work is integral to the Interim Study (hereinafter "pre-Agreement in-kind contributions", as defined in Article I.L of this Agreement); WHEREAS, on October 31, 2008 the Assistant Secretary of the Army (Civil Works) delegated the authority to determine if the pre-Agreement in-kind contributions are integral to the Interim Study to the Commander, Northwestern Division and on December 5, 2008 the Commander, Northwestern Division determined that the pre-Agreement in-kind contributions are integral to the Interim Study; Article I.L: L. The term "pre-Agreement in-kind contributions" shall mean the work carried out by the Non-Federal Sponsor prior to the effective date of this Agreement to complete a comprehensive analysis on existing conditions in the Lower Boise Basin that the Government determined is integral to the Interim Study.	to this can be removed to bring the FCSA in better alignment with the model.
Pages 1-16	Removed all reference to *post-agreement* in kind contributions.	Removal of the reference to *pre-agreement* in kind contributions necessitates removal of references to *post-agreement* in-kind contributions and the more general term "in kind contributions" can be used throughout which brings the FCSA better in line with the model.
Page 2/ Article I.A	Removed non-standard language added to the FCSA: "existing conditions, identify the impact of flood events, identify"evaluate solutions to water storage and prepare a project management plan incorporating said data to""	Language was removed as the PMP of the study has shifted focus from these tasks to standard FCSA tasks. This brings FCSA closer to the model.
Page 2/ Article I.A	Removed reference to ecosystem restoration.	While there is authority to study ecosystem

Page No./ Article	Deviation (from Previously Approved Model FCSA)	Justification
		restoration, the non-federal sponsor only has funding and authority to study the other two authorized study purposes of flood risk management and water supply.
Page 2/ Article I.A	Removed reference to paragraph L which was also removed (definition of pre-agreement in kind contributions)	Brings FCSA better in line with model.
Page 2-3/ Article I.B	Removed the statement "the costs of the *non-Federal pre-Agreement in-kind contributions* determined in accordance with Article II.E. of this Agreement"	This is language that does not appear in the model and can be removed with the removal of all references to pre-agreement contributions.
Page 3/ Article I.B	Added standard model language related to ATR and IEPR: the Government's costs of Agency Technical Review and other review processes required by the Government; the Government's costs of Independent External Peer Review, if required, except the costs of any contract for an Independent External Peer Review Panel; the Government's supervision and administration costs; the Non-Federal Sponsor's and the Government's costs of participation in the Study Coordination Team in accordance with Article III of this Agreement; the Government's costs of contract dispute settlements or awards; and the Non-Federal Sponsor's and the Government's costs of audit in accordance with Article VI.B. and Article VI.C. of this Agreement. The term does not include any costs of dispute resolution under Article V of this Agreement; any costs incurred as part of reconnaissance studies; any costs incurred as part of feasibility studies under any other agreement; the Non-Federal Sponsor's costs of negotiating this Agreement; any costs of a contract for an Independent External Peer Review panel; or any costs of negotiating a design agreement for a project or separable element thereof.	Language was not applicable to the interim feasibility phase when agreement was executed in 2009 but is applicable to the re-scoped study. Brings FCSA better in line with current FCSA model.
Page 6 /	Removed optional clause:	This was an optional

Page No./ Article	Deviation (from Previously Approved Model FCSA)	Justification
Article II.A.9	As of the effective date of this Agreement, $172,000 of Federal funds is currently projected to be available for the *Interim Study*. The Government makes no commitment to request Congress to provide additional Federal funds for the *Interim Study*. Further, the Government's financial participation in the *Interim Study* is limited to the Federal funds that the Government makes available to the *Interim Study*.	article for studies that do not conform to budget policy and is no longer applicable to the study.
Page 8/ Article II.E.6	Removed added article referring to pre-agreement in kind contributions: 6. The Government shall not include in *total interim study costs* any costs for *pre- Agreement in-kind contributions* that exceed $500,000.	No longer applicable.
Page 10-11/ Article IV.A.1	Updated study costs and cost-sharing costs. Updated in kind contributions. Updated non-federal proportionate share percentage. Removed references to pre and post agreement work in kind	Updated costs to reflect change in scope.
Page 11/ Article IV.A.2	Updated date of first quarter under amended FCSA.	Updated to reflect change in schedule.
Page 18	Updated Names for signatories.	Updated to reflect changes in personnel.
Page 20	Updated Name for signatory.	Updated to reflect change in personnel.

Amendments to the

FEASIBILITY COST SHARE AGREEMENT
BETWEEN
THE DEPARTMENT OF THE ARMY
AND
IDAHO DEPARTMENT OF WATER RESOURCES
FOR THE
BOISE RIVER STUDY
BOISE, IDAHO

All of the proposed amendments to the previously approved Feasibility Cost Share Agreement for the study are shown below. An electronic copy of the feasibility cost share agreement with track changes is available to augment the deviation report review process.

Page No./ Article	Deviation (from Previously Approved Model FCSA)	Justification
Pages 1-16	Removed all references to *interim* study.	*Interim* term was used in the previous study as a deviation from the standard to denote that this was not a full-fledged feasibility study under the previous scope of work. Following a SMART planning re-scoping charette, the scope nowencompasses a full feasibility study and the "interim"term can be removed. This brings the FCSA better in line with the model FCSA.
Pages 1-16	Remove all references to *pre-agreement* in kind contributions including non model WHEREAS clauses on pages 1-2 and Article I.L on page 4: WHEREAS, Section 4038 of the Water Resources Development Act of 2007, Public Law 110-114, authorizes the Secretary of the Army to credit toward the non-Federal share of the cost of the study the cost, not to exceed $500,000, of work carried out by the non-Federal interest before the date of the partnership agreement for the project if the Secretary of	Previous wording referred to credit authorized by Congress to the Sponsor for pre-Agreement work that was determined to be integral to the study. This credit was exhausted during the "interim" phase of the project and references

Page No./ Article	Deviation (from Previously Approved Model FCSA)	Justification
	the Army determines that the work is integral to the Interim Study (hereinafter "pre-Agreement in-kind contributions", as defined in Article I.L of this Agreement); WHEREAS, on October 31, 2008 the Assistant Secretary of the Army (Civil Works) delegated the authority to determine if the pre-Agreement in-kind contributions are integral to the Interim Study to the Commander, Northwestern Division and on December 5, 2008 the Commander, Northwestern Division determined that the pre-Agreement in-kind contributions are integral to the Interim Study; Article I.L: L. The term "pre-Agreement in-kind contributions" shall mean the work carried out by the Non-Federal Sponsor prior to the effective date of this Agreement to complete a comprehensive analysis on existing conditions in the Lower Boise Basin that the Government determined is integral to the Interim Study.	to this can be removed to bring the FCSA in better alignment with the model.
Pages 1-16	Removed all reference to *post-agreement* in kind contributions.	Removal of the reference to *pre-agreement* in kind contributions necessitates removal of references to *post-agreement* in-kind contributions and the more general term "in kind contributions" can be used throughout which brings the FCSA better in line with the model.
Page 2/ Article I.A	Removed non-standard language added to the FCSA: "existing conditions, identify the impact of flood events, identify"evaluate solutions to water storage and prepare a project management plan incorporating said data to""	Language was removed as the PMP of the study has shifted focus from these tasks to standard FCSA tasks. This brings FCSA closer to the model.
Page 2/ Article I.A	Removed reference to ecosystem restoration.	While there is authority to study ecosystem

Boise River Feasibility Study
Summary of Project Tasks from Revised PMP
September 18, 2013

SCOPE:

The study consists of measures to address the two primary project objectives of Flood Risk Management and Water Supply. While planning is an iterative process and additional measures and alternatives may be identified throughout the study, thus far potential measures appear to be focused in the following areas:

- **Combined Flood Risk Management and Water Supply Measures:** Modification of Arrowrock Dam, off-stream storage
- **Nonstructural Water Supply Measures:** Water storage in surcharge space
- **Flood Risk Management Measures:**
  - Modify existing structures: Lucky Peak Dam, upgrade irrigation structures
  - Non-structural: Regular flushing flows, education and outreach
  - Increase Channel Conveyance: Replace push-up dams with inflatable weirs, replace bridges, construct or improve levees
  - Erosion Control: Stabilize areas subject to pit capture
  - Channel Maintenance

TASKS:

The following tasks have been identified in the draft Project Management Plan as necessary to complete the feasibility study and comply with USACE planning guidance under the SMART Planning / 3x3x3 paradigm.

Gather Data:

- Geotechnical Surveys (Core Sampling, Aggregate Availability, Concrete Evaluations, Lab Testing, Etc.)
- Collect Additional First Floor Elevation Data For Use In Economic Analyses
- Collect Cultural Resources Information
- Collect Real Estate Information

Develop / Update Models:

- Integration Of Existing Hydrology And Reservoir Models
- Development Of Model Scenarios For Alternatives
- Conduct Analyses To Determine H&H Effects Of Various Alternatives Including Hydraulic Analysis For Mapping Of Inundation Areas For With And Without Project Conditions To Determine Benefits
- Develop Economic Models And Conduct Analyses

Agency / Stakeholder / Tribal Coordination:

- Coordination With Local Stakeholder Groups
- Coordination With State Agencies
- Fish And Wildlife Coordination Act (FWCA) Consultation
- Endangered Species Act Consultation / Biological Assessment Development
- Clean Water Act Consultation
- National Historic Preservation Act Consultation
- Conduct Consultation With Native American Tribes

Feasibility Study:

- Identification Of Problems And Opportunities
- Identifying Future Without Project Condition
- Identifying Objectives And Constraints
- Conducting Alternatives Formulation
- Evaluation Of Alternatives
- Determine Costs And Benefits Of Alternatives
- Comparison Of Alternatives
- Plan Selection

Analyze Environmental Effects / Develop EIS:

- Publish Notice Of Intent
- Conduct Public Scoping / Public Meeting
- Write Purpose And Need
- Update Existing Conditions
- Conduct Environmental Affects Analysis
- Prepare Mitigation Plan
- Prepare Monitoring And Am Plan
- Conduct Public Meetings (Draft EIS)
- Prepare Final EIS
- Write Record Of Decision
- Publish Notice Of Availability

Develop Additional Design And Cost Details:

- Seismic Analysis
- Water Diversion During Construction
- Downstream Cofferdam Design
- Spillway Design And Location
- Additional Design Necessary For Other Plan Measures Identified During Feasibility
- Develop Detailed Estimate For Selected Plan
- Formal Risk Analysis For Selected Plan
- Feasibility Cost Report
- Develop Real Estate Acquisition Strategy For Selected Plan
- Provide Real Estate Assessments For Any Relocated Utilities / Facilities
- 30% Design For Selected Plan
- Consequence And Failure Mode Analysis And Preventative Measures

Mandatory Reviews:

- District Quality Control
- Agency Technical Review
- Independent External Peer Review
- In Progress Reviews
- Civil Works Review Board

PROJECT MANAGEMENT PLAN
BOISE RIVER FEASIBILITY STUDY
ADA AND CANYON COUNTIES, IDAHO
GENERAL INVESTIGATION

1. INTRODUCTION

The Boise River Feasibility Study will evaluate plans to reduce flood risk and meet current and future water supply needs in the lower Boise River watershed. The lower Boise River, a tributary to the Snake River, is located in southwestern Idaho primarily in Ada and Canyon counties. Communities and development along the Boise River have experienced repeated minor flooding and flood risk management experts emphasize that a significant flood event with major flood damage will occur in the future. Almost 40 percent of Idaho residents live in the watershed, with one-sixth of the State's population residing in the floodplain. County estimates place over $10 billion in properties at risk within the floodplain (Ada City-County Emergency Management 2011; Canyon County 2012).

The watershed has experienced the most significant growth in the State and, before the economic downturn, included one of the fastest growing communities in the nation. Continuing to meet current water needs as well as future demands is a major concern. The water supply in the valley is a complex system of hydrologic interconnection. New development has been restricted in areas experiencing aquifer declines and in areas where the shallow aquifer is directly connected to the surface water system. Existing uses are also at risk of curtailment in these areas in low water year. In response to a Joint Memorial passed by the Idaho Legislature in 2008, the State is currently developing a regional water resources management plan to identify strategies to meet current and future water supply and demand for the next 50 years.

The U.S. Army Corps of Engineers (USACE), Walla Walla District and U.S. Bureau of Reclamation (Reclamation) operate two Federal projects as a coordinated system to provide flood risk reduction and water supply benefits. The USACE operates Lucky Peak Dam and Lake, which was authorized by the Flood Control Acts of 1944 and 1946, for flood control and irrigation. Reclamation operates the Boise Project, which was authorized by the Reclamation Act of 1902, primarily for irrigation, flood control, and power. The USACE and Reclamation operate the three Federal reservoirs associated with these projects according to formal flood-control criteria and rule curves contained in a joint Water Control Manual (USACE 1988). The integrated system operations make it impractical to examine flood risk and water supply objectives separately.

2. STUDY SPONSOR

The Idaho Water Resources Board (IWRB) will cost-share (50 percent /50 percent) the feasibility study with the USACE. The IWRB is a water resource agency recognized in the Idaho constitution and is comprised of an eight member bi-partisan group appointed by the Governor (four selected to represent geographic areas of the state, four at-large). The IWRB's duties are to formulate and implement a comprehensive state water plan and comprehensive basin plans, provide financial assistance for water development and conservation projects, and operate numerous other water management programs. The Idaho Department of Water Resources (IDWR) provides project coordination and technical support on behalf of the IWRB. The State Floodplain Coordinator for the National Flood Insurance Program is also located within the IDWR.

3. STUDY AUTHORITIES

The Boise River Feasibility Study was authorized by Section 414 of the Water Resources Development Act (WRDA) of 1999, as amended by Section 4038 of WRDA 2007. The WRDA 1999 authorized a study on the Boise River for flood risk management, while WRDA 2007 added water supply and ecosystem restoration as project purposes. In addition, WRDA 2007 authorized up to $500,000 in-kind credit for work completed by the non-Federal Sponsor before the date of the partnership agreement, if the work was determined integral to the project. In December 2008, USACE Northwestern Division (NWD) approved the Integral Determination Finding to credit the Sponsor $500,000. These in kind service credits were exhausted under a previous phase of the project.

> Section 414, WRDA 1999 reads: *"The Secretary shall conduct a study to determine the feasibility of undertaking flood control on the Boise River in Boise, Idaho."*
>
> Section 4038, WRDA 2007 reads: *"The study for flood control, Boise River, Idaho, authorized by section 414 of the Water Resources Development Act of 1999 (113 Stat. 324), is modified—*
>
> > *(1) to add ecosystem restoration and water supply as project purposes to be studied; and*
> > *(2) to require the Secretary to credit toward the non-Federal share of the cost of the study the cost, not to exceed $500,000, of work carried out by the non-Federal interest before the date of the partnership agreement for the project if the Secretary determines that the work is integral to the project."*

The cost share funding for the IWRB was appropriated to study the feasibility of new water storage options and related water supply and flood risk management benefits and purposes. The Sponsor does not have financial capability to support the ecosystem restoration purpose. Alternatives will be formulated for water supply and flood risk management purposes. Incidental environmental restoration benefits may be possible with some flood risk or water supply measures, and will be incorporated where feasible. If another project sponsor is identified with an interest in ecosystem restoration opportunities, alternatives may be reformulated to incorporate this purpose within the scope of the 3x3x3 guidance.

4. STUDY AREA

The Boise River is approximately 102 miles in length, is located entirely within the State of Idaho, and is one of the major tributaries to the Snake River. The lower Boise River watershed contains the Boise River drainage from Lucky Peak Dam to its confluence with the Snake River in southwest Idaho. This roughly 64-mile reach of river drops approximately 650 feet in elevation. The lower Boise River floodplain encompasses primarily Ada and Canyon Counties, and includes the cities of Boise (state capital), Garden City, Meridian, Eagle, Star, Nampa, Middleton, Caldwell, Notus, and Parma. The population of the Boise metropolitan area (Treasure Valley) accounts for nearly 40 percent of Idaho's total population (US Census Bureau, 2010). The metropolitan area is the third largest in the Pacific Northwest after Seattle, Washington and Portland, Oregon.

The Boise River is highly regulated. Natural flows are modified by the three Federal storage projects on the upper river (Lucky Peak Dam operated by USACE; Arrowrock and Anderson Ranch dams operated by Reclamation) jointly operated by the USACE and Reclamation as a system for the primary purposes of flood risk reduction and irrigation water supply. Additional Project facilities include Lake Lowell, an offstream storage reservoir operated by Reclamation, and numerous diversion canals that are federally and privately operated.

Operation of the Federal reservoirs is a balancing act between reducing flood risk and having sufficient irrigation water for crops by mid- and late summer. Recreation, hydropower, and fish and wildlife functions are also authorized purposes but are secondary or incidental to achieving the flood risk and irrigation water supply objectives. Water is not released for these purposes unless reservoir storage space is assigned for that specific purpose.

A non-continuous series of non-Federal levees line the Boise River through developed areas in downtown Boise, Garden City, and Eagle. A few are inspected through the USACE Levee Safety Program, but the majority are unregulated and not maintained.

Seven tributaries (Cottonwood Creek, Hulls Gulch, Crane Creek, Stuart Gulch, Polecat Gulch, Pierce Gulch, and Seaman Gulch) drain through narrow canyons onto alluvial fans and into the Boise River within the city of Boise. The watersheds for these tributaries range in size from 1.2 square miles (Polecat Gulch) to 16.5 square miles (Cottonwood Creek). Residential development occurs in the floodplain of many of these tributaries.

The feasibility study will focus on formulating plans to address flood risk associated with the mainstem Boise River and not the tributaries. The charette participants determined that, based on existing information, tributary flood risk issues could not be addressed within the 3X3X3 scope framework. Further, the USACE Project Delivery Team (PDT) felt that the most significant flood risks were associated with the mainstem Boise River and, based on previous studies, it would be difficult to show Federal interest for projects associated with the tributaries. While alternatives would not be formulated to address these risks, contributions from tributaries would be considered in the overall comparison and analysis of alternatives.

Complex, interconnected surface water and aquifer systems supply current water uses in the Treasure Valley which includes irrigation, domestic, commercial, municipal, and industrial uses. Natural flow, stored surface water, and ground water are reused in multiple locations across the valley through a network of drains and direct discharge into the river. Surface water supplies an estimated 90 percent of the current water demand. Approximately 77 percent of the annual Boise River flow occurs as snowpack runoff during the March to July period (IWRB 2012). The average unregulated natural flow volume in the Boise River as measured at Lucky Peak Dam (1929 – 2010 period) is 1.9 million acre-feet and the average annual basin outflow as measured at the Parma gage (1972 – 2010 period) is 1.1 million acre-feet, which includes seasonal runoff and discharge or return flows from the aquifer (IDWR 2011).

The shallow aquifers of the Treasure Valley Aquifer System are generally in direct hydraulic communication with the Boise River and to a lesser extent the Snake River. Surface water influences aquifer levels as a result of recharge through canal seepage, flood irrigation, and other sources. The aquifer system contributes to Boise River natural flow by discharging water back to the river through a network of constructed drains, tributaries, or directly to the river. It is estimated that in 2000 approximately 1.1 million acre-feet of water recharged the aquifer system and a total of 1.06 million acre-feet was discharged from the aquifer (881,600 acre-feet discharged through drains, tributaries, or the river and an additional 175,000 acre-feet diverted from wells) (Urban 2004).

5. PROJECT MANAGEMENT PLAN (PMP) PURPOSE

As noted in the FCSA between the Corps and IWRB at Article I.J., and elsewhere, this PMP guides the performance of the Feasibility Study. The PMP was developed as a tool to organize and manage the development and completion of the Feasibility Study, and defines and documents the assumptions, scope of work, tasks, products, and the level of detail required for the report. The PMP is the basis for obtaining agreement on study goals and expectations,

developing a plan to manage the study to meet those goals and expectations, establishing good communications, defining the study scope, and defining the resources needed to complete the study. The PMP includes the following:

- Study tasks and responsibility for their accomplishment.
- The estimated cost of individual study tasks and total study cost, including the negotiated cost of work items to be accomplished by Sponsor as in-kind services.
- The schedule of performance and milestones.

The PMP is a working document and is expected to be revised/modified as needed throughout the study process. It is intended to compliment any local efforts. Any necessary changes in project scope, schedule, costs and non-Federal contributions will be mutually agreed upon by both the Corps and the IWRB.

6. STUDY PROCESS

General Investigation (GI) studies are conducted in two phases in accordance with WRDA of 1986: the reconnaissance phase and the feasibility phase.

A reconnaissance study, completed with full Federal funding, determines whether or not planning to develop a project should proceed to a more detailed feasibility study. The *Lower Boise River and Tributaries, Idaho Reconnaissance Study*, dated May 1995 identified several proposals for feasibility-level studies but was put in an inactive status due to lack of local sponsorship. Recent interest from the IWRB led to the development of a PMP for a feasibility level study and later the full feasibility described in this PMP.

The purposes of this feasibility phase are:

- To determine the feasibility of a multipurpose project for flood risk management and water supply including the formulation and analysis of alternatives, analysis of impacts necessary for compliance with the National Environmental Policy Act (NEPA) and all other relevant environmental laws and regulations, and develop preliminary (30%) design details for project features associated with the preferred alternative.

7. REGIONAL CONSIDERATIONS

The study will consider previous and ongoing regional efforts including but not limited to those by Reclamation, U.S. Geological Survey (USGS), local communities, flood control districts, drainage districts, irrigation districts, the University of Idaho Ecohydraulics, Idaho Rivers United, Total Maximum Daily Load (TMDL) requirements, and other state and local organizations.

8. PROBLEMS AND OPPORTUNITIES INDENTIFIED TO DATE

Problems

Numerous problems were identified by the study team who developed the problem statements below. Additional background information is provided where available.

a. Unreliable and inadequate flood protection results in flood damages along the Boise River corridor.
   - Flood risks were reduced by the addition of Lucky Peak Dam to the Federal reservoir system in 1955. However, current operational configuration of the Federal reservoir system only provides a level of protection for up to a 3-percent chance exceedance flood event.
   - Since 1955, when all three Federal reservoirs were operational, the reservoir system regulation objective of 6,500 cubic feet per second (cfs) has been equaled or exceeded 21 times and flood stage (7,200 cfs) equaled or exceeded 10 times.
   - Current reservoir system operational objectives do not optimize flood risk reduction or water supply objectives. Optimum flood risk reduction would keep reservoirs empty, while optimum water supply operation would keep them full.
   - Annual precipitation variability has added to the challenge of operation reservoirs to reduce downstream flood risk.

b. The river corridor (including the floodplain, channel, and tributaries) is constrained by development, limiting options for flood risk management.
   - More than one-sixth of Idaho's population and, according to Ada and Canyon counties, infrastructure greater than $10 billion is located in the lower Boise River floodplain (Ada City-County Emergency Management 2011; Canyon County 2012). Estimated damages from a 0.2-percent chance exceedance flood are more than $2.6 billion.
   - Infrastructure at risk includes residences, industrial and commercial facilities, drinking water and wastewater treatment facilities, schools, major arterial roads and bridges, local, state and Federal government offices, and the Ada County traffic control operations center.
   - Flows above 9,000 cfs would be catastrophic for the entire region.

c. Channel capacity is insufficient to convey large flow events.
   - Channel capacity has been reduced by sediment deposition, vegetation growth, adjacent land development, and unstable stream channels.
   - Push-up dams constrict river channel and exacerbate Boise River flooding.
   - Problem areas during flood events include the Boise River in Garden City, Eagle at Eagle Island, Star Middleton, State Highway 95 Bridge, and numerous gravel pits in Eagle and throughout Canyon County.

d. The risk to life and property extends beyond the mapped floodplain due to risk associated with mainstem irrigation diversion headgates and canal bank failure during a flood event.
   - There is a risk that irrigation diversion structures on the mainstem Boise River can be overtopped or fail and convey water inland.
   - Minor Boise River flooding in 2012 resulted in headgate and canal bank failure of the Little Pioneer Canal, requiring intervention and structural repair by local emergency managers and the local flood control district.

e. Numerous grave extraction pits and manmade ponds in the floodplain captured during flood events will cause severe erosion and sudden channel migration.

- Uncontrolled capture of gravel pits adjacent to the river channel can occur during a flood event when the river channel erodes a strip of land separating the river from the pit (pond). The river then migrates into the pit and converts the off-channel pit into the river channel. This event results in river channel instability through localized increase in stream flow velocities. Pit capture results in severe stream channel erosion up- and downstream, putting property at risk and impacting riparian and aquatic habitat.
- Several reaches of the Boise River have a high density of gravel extraction ponds, many near residential areas with high value real estate.
- A pit capture that occurred in 2006 resulted in bank and bed instability one mile upstream of the event.
- Minor flooding in 2012 threatened pit capture which was prevented only after extraordinary measures were taken.

f. Existing water storage capacity limits current growth in the basin, and does not meet current needs and will not meet future demands.

- Existing water supplies are currently limited in some areas of the valley and the need for additional supplies is expected to increase in the future. Current water supply issues are managed at the local level by limited new development, using water marketing programs, and managed curtailment of junior water rights.
- The aquifer and surface water systems are interconnected and very complex. Natural flow, stored surface water, and ground water are reused in multiple locations across the valley through a network of natural and manmade drains and direct discharge into the river.
- Storage water is not available in all areas of the watershed due to access or timing constraints. These areas must rely on ground water. Due to aquifer declines in localized areas and the interconnectivity between ground and surface water, there are some groundwater moratoriums or groundwater management areas in the watershed, which either prohibit or restrict new ground water development.
- Upstream of Star Bridge, surface water is considered to be fully appropriated during much of the year and the shallow ground water is considered to be a tributary to the surface water systems. As a result, there is currently a moratorium restricting development of new shallow ground water and new surface water uses upstream of Star Bridge. New surface water uses are prohibited unless a formal plan to mitigate the new use is submitted and approved. The moratorium impacts both existing and future water uses and includes several larger cities in the Treasure Valley including Boise, Garden Valley, Eagle, and parts of Meridian.
- Recent completion of a water right adjudication may result in the administration of existing junior ground water uses that have not previously been regulated. This could result in the curtailment of a large number of existing ground water uses.
- Future water needs cannot be met solely with ground water without impacting the stability of the aquifer. This will result in an increased use of surface water to meet existing and future water needs.
- Additional annual water supply needed to meet future demand is predicted to range from 82,000 to 170,000 acre-feet over the next 50 years (IWRB, 2012).

g. Annual precipitation variability affects the reliability of water supply.

- The fixed water storage capacity is not adequate to store sufficient water in wet years to offset the dry years. A significant amount of surface water leaves the basin annually due to limited storage capacity.
- Current and predicted intra-year variability will result in reduced natural flows in the summer and fall, less water to fill natural flow water rights, increased use of storage water, and less reservoir carry over.
- Climate variability predictions project that the wet years are getting wetter and dry years getting drier.

h. Current winter operations provide 'minimum' flows for fish and instream maintenance and do not optimize fishery health.
   - Reclamation, through administrative decision and in consultation with the Idaho Department of Fish and Game, uses stored water in Lucky Peak to maintain a minimum winter instream flow of at least 240 cfs for fish and instream maintenance. Historically, winter flows have exceeded or met this minimum in all but two years.
   - IDFG indicates that flows exceeding 240 cfs will improve the quantity and quality of fish and wildlife habitat. IDFG has also indicated that fish benefits would be improved if instream releases could be shaped to more closely replicate the shape of a natural hydrograph.

Opportunities

Charette participants identified very broad, overarching opportunities, which could be achieved in many different ways.

- Reduce flood risk to life safety and property damage.
- Meet current and future water demands.

9. TASKS AND ANALYSES

The following describes tasks associated with the development of the Feasibility Study. A breakout of work by discipline is included in Attachment A and a summary of costs and schedule by task are included in Attachment B.

Develop the Combined Feasibility Report / Environmental Impact Statement
Development of the feasibility report will require the PDT to refine problems and opportunities, identify objectives, formulate alternatives, assess the future without project conditions (FWPC), assess and compare alternatives and select a preferred alternative. This alternatives analysis includes modeling of the river system and development of scenarios to optimize alternatives and to analyze the potential hydrologic and economic benefits of alternatives in comparison to the FWPC. This report will be combined with the Environmental Impact Statement to reduce overlap and streamline the documentation. The Environmental Impact Statement will document existing conditions in the project area, assess the environmental and socio-economic impacts of alternatives, determine any mitigation measures necessary and ensure compliance with applicable environmental laws and regulations.

Public Involvement
Public Involvement will be conducted as part of the NEPA process and will involve a public scoping meeting, public meeting on the draft EIS and public hearing on the final EIS. Sharing of information throughout the study will be conducted using a USACE-hosted public website. Additional coordination with stakeholders will occur throughout the process on an as-needed basis. Additional public meetings may be held at milestones throughout the feasibility study process as warranted.

Conduct Surveys
Geotechnical surveys within the project area will occur to assist in determining design considerations for project features. Cultural resources surveys may also be needed in order to determine presence/ absence and assist in analyses of impacts.

Conduct Modeling and GIS Analyses
Existing models developed for the system (including HEC-RAS and RiverWare) will be used to the extent possible to develop scenarios for project alternatives and assess the potential benefits of alternatives. HEC-FDA will be used to assess the economic benefits of alternatives. GIS analyses will be used to assist in the development of inputs for these models and to assess the environmental impacts of alternatives.

Develop the Cost Engineering Appendix
General cost estimates and abbreviated risk analysis will be developed for alternatives. A detailed cost estimate and formal risk analysis will be developed for the selected plan. A feasibility Cost Report (including project schedule and TPCS) will be developed for the final plan.

Develop the Engineering Appendix
The Engineering Appendix will summarize engineering information used for the development of alternatives and 30% design of the selected plan. This will include details and outputs of modeling activities, design details, and a consequence of failure mode analysis.

Develop the Real Estate Plan
Develop real estate cost estimates (gross order of magnitude) for alternatives in the feasibility phase. Develop real estate acquisition strategy for selected plan. Develop real estate assessments for any relocated utilities / facilities.

10. SCHEDULE AND MILESTONES

Major milestones are identified below. The start date and subsequent dates are contingent upon execution of the FCSA Amendment by the end of November 2013 and availability of funds.

Scheduled	Milestone
Dec 2013	Issue NOI
Jan 2014	Public Scoping Meetings
Mar 2014	IPR with HQ / Alternatives Milestone
Aug 2014	Complete Geotechnical Surveys
Dec 2014	Complete H&H and Econ Modeling
Mar 2015	Complete Draft Report
Apr 2015	District Quality Control
May 2015	NWD Review of Draft
Jul 2015	IPR with HQ / Tentatively Selected Plan Milestone
Aug 2015	Concurrent Policy, Technical, and Public Review
Nov 2015	Address comments, update report
Jan 2016	IPR with HQ/ Agency Decision Milestone
Mar 2016	Complete 30% Design
May 2016	Complete Final Report
Jun 2016	Final Report Submitted to HQ
Dec 2016	Civil Works Review Board
Feb 2017	Final Report Milestone
Apr 2017	Chief's Report Milestone
Jul 2017	Project Closeout

11. FEASIBILITY STUDY COST ESTIMATE

Estimated costs for the Feasibility Study are based on an analysis of the tasks and work elements to be accomplished by the Corps' Walla Walla District and the Sponsor. Baseline cost estimates are included in this PMP and contain consideration of in-house labor (Corps and Sponsor), estimated travel, production of reports, supervision and administration, and indirect and overhead charges. Attachment B identifies estimated cost by study task.

Total study costs are estimated to be $3,000,000 of which $1,600,000 ($1,400,000 of cost-shared study costs plus $200,000 of non-cost shared Independent External Peer Review) is the Federal cash contribution. The non-Federal Sponsor shall contribute 50 percent of the total

study costs, excluding the cost of the Independent External Peer Review ($200,000) with $1,300,000 provided in cash and $100,000 provided as in kind contributions.

12. MANAGEMENT OF BUDGET AND ACCOUNTING

As noted earlier, the total estimated study costs of $3,000,000 are to be shared between the Corps and the Sponsor. The IWRB's contribution of $1,400,000 is comprised of in-kind services and cash

a) The IWRB agrees to provide its funding in advance of the Corps' performance of tasks. Per Article IV.B.1. of the FCSA, the Corps will provide written notification in the form of an invoice 90 days prior to expending $500,000 of its own funds, requesting the IWRB's 50 percent proportionate share of funds be made available to the Corps to cover work projected for the upcoming six month period. The Corps shall continue to invoice the IWRB biannually for its 50 percent proportionate share unless both parties agree to modify the billing period in accordance with Section 14, Change Management Plan.

c) Funds contributed by the IWRB will only be used to pay for costs incurred by the Corps associated with completing the tasks described in Section 9 of the PMP.

d) The IWRB shall remit payments to the Corps by providing an electronic funds transfer or by delivering a check payable to:

FAO, USAED, WALLA WALLA & G4
Attn: District Engineer
Walla Walla District, Attn: CENWW-PM
Walla Walla, WA 99362

e) The IWRB shall coordinate with the Corps' PM to provide records for credit of services performed during the previous billing period prior to formulation of the next invoice.

13. CRITICAL ASSUMPTIONS AND CONSTRAINTS

The study scope, costs and schedule described in this PMP are based on the following assumptions and constraints.

Assumptions

- Congressional funds will be appropriated in time to maintain the schedule provided as Attachment B. It is anticipated that with a continuous funding stream the Feasibility Study tasks described in this PMP can be accomplished over a 36 month period. Lack of continued funding makes it more difficult to schedule and retain PDT members. If a continuous funding stream is not maintained, schedules costs and budgets will need to be reassessed as described in Section 14, Change Management Plan.
- The Sponsor, cooperating agencies, and stakeholders will provide information and comment in a timely manner as scheduled.

Constraints

- The study is adhering to the 3x3x3 tenets of SMART planning which means the study cost is constrained to 3 years counted as time where funding is actually provided to complete necessary tasks following the completion of the re-scoping charette. This overarching constraint limits the type of surveys and detailed engineering analyses that can be conducted during the feasibility phase of the project.

14. CHANGE MANAGEMENT PLAN

The PMP documents scope, schedule and budget for the Feasibility Study phase. All additions to scope, and schedule and budget changes will be considered against the need to enhance the original scope to include additional local partnerships. Changes will be coordinated between the Corps and the Sponsor, and the PMP revised to identify any impacts to scope, schedule and budget.

The Corps' PM will monitor physical and fiscal progress of all work required for completion of a product. PDT members are responsible for performing to budget and schedule. Any potential changes should be raised by the PDT as soon as possible in order to evaluate the impacts to the entire study.

Formal evaluation for changed conditions will occur quarterly (every three months). These reviews will provide an opportunity to revise assumed outcomes, scope, cost, and shared funding commitments as appropriate and ensure a favorable outcome. The Corps and the IWRB will review the scope, costs and shared funding commitments in the PMP to determine if modifications are required. Modifications will occur with the mutual consent of both parties and be documented in writing, and signed and dated by both parties.

A Schedule and Cost Change Request (SACCR) will be used to document major schedule or scope changes and cost increases of 10 percent or greater.

15. RISK MANAGEMENT PLAN

The PDT will take an active approach to risk management. The PDT will communicate any significant concerns related to unusual, unforeseen, undocumented, or potential risks that may arise during the study to the PM. A review of study progress, scope and budget will occur regularly, at a minimum quarterly (every three months), to determine if scope, schedule, or budget changes are required. Specific risks and associated control features will be identified with respect to scope, quality, schedule, and cost during the quarterly reviews. The Risk Register will be used throughout the process in order to document significant study risks and IPRs with HQ and NWD will be used to communicate these risks throughout the vertical team.

16. CUSTOMER OBJECTIVES AND PROJECT OBJECTIVES

Quality objectives:

- Meet scheduled milestone dates subject to the availability of funding.
- Meet Sponsor expectations.
- Meet stakeholders' expectations.
- Monitor and address input from internal and external stakeholders.
- Perform independent and peer reviews at appropriate times and consider all review comments.

17. QUALITY MANAGEMENT PLAN

The review plan for this project is currently being revised and will be included here once completed. It is anticipated that DQC, ATR, Cost ATR, and Types I and II IEPR will be required for this project.

18. ACQUISITION PLAN

The Corps may identify tasks best performed by contract support and has existing contracts in place through the Planning Branch or Engineering and Design Branch to execute these activities. Geotechnical surveys may be contracted out to the USBR through a MIPR as they have significant prior experience conducting surveys associated with Arrowrock Dam.

19. COMMUNICATION PLAN

a) External

External communications will be handled by the PDT member responsible with that activity. The NEPA lead will assume responsibility for public meetings and stakeholder coordination related to NEPA compliance. The lead Biologist will handle communication related to the FWCA, ESA, and other applicable environmental laws. The Cultural Resources lead with handle communications related to the NHPA and tribal consultation, The PM will participate in all external communications as needed and lead communication efforts with the USBR.

b) Internal

Information management and records: All documents will be produced using Microsoft (MS) Office including, MS Word and Excel and, when transmitted electronically, will be in either *.doc or *.pdf format. Project schedules will be developed using MS Project.

Project Delivery Team: The PDT will consist of technical study team members within the Corps, any contract support, and team members identified by the IWRB.

All team members shall support efficient and accessible project communications and specifically support the necessary team meetings. Effective communications are key to the execution of this study. Communication among team members will consist of both formal team meetings and informal day-to-day interaction. E-mail is encouraged as the primary means of written communication among all team members.

Team meetings will be held as needed to discuss study schedule, work requirements, and findings. Team meetings may consist of conference calls to help reduce travel expenses. All significant meetings, e-mails, and phone calls will be documented with memos and/or shared by e-mail with the PDT. The PDT is encouraged to hold open, frank discussions with the PM, sponsor, and other members.

c) Corps and Partner

The PMs for the Corps and the IWRB will serve as the central point of communications for day-to-day activities and coordination between the agencies.

The Corps and IWRB will establish an executive committee made up of the Corps Deputy District Engineer, the Corps Chief of Planning, the Corps Project Manager, and on behalf of the IWRB, the IDWR Planning Bureau Chief, IDWR Project Manager, and the IDWR Technical Services Administrator. This committee will meet quarterly to discuss study progress and budget. The PDT will present any recommendations to the executive committee.

Upon execution of the FCSA, the Corps shall provide quarterly progress reports (every three months) to the Sponsor that will:

a) describe costs and staff days expended, status of ongoing and completed tasks, and accounting of Sponsor credit from previous in-kind work, credit for Sponsor work completed during PMP execution, and cash contributions for the quarter completed.

b) describe anticipated work and project costs for the upcoming quarter.

20. GEOSPATIAL DATA MANAGEMENT

Geospatial analyses will be conducted to assist in the determination of project effects, costs, and benefits to develop maps that will assist in communication. All GIS information will be stored in a shared network drive and will be accessible throughout the district. The general engineering section will maintain the geospatial database for this project.

ATTACHMENT A
Scope of Work by Discipline

1. Plan Formulation
1.1. Lead the plan formulation process, document the plan formulation process in the feasibility report and conduct reviews necessary to ensure compliance with USACE regulations:
1.1.1. Identification of Problems and Opportunities: Utilize existing literature, information, discussions with sponsor and stakeholders to determine problems and opportunities associated with flood risk management, water supply and ecosystem restoration
1.1.2. Identify Future Without Project Condition: Forecast future changes in the project area that may have effects on flood risk and water supply which will be used as a basis of comparison for measuring the benefits of alternatives
1.1.3. Identify Objectives and Constraints: Develop specific project objectives for flood risk management and water supply based on the problems and opportunities and identify constraints that limit potential actions or alternatives
1.1.4. Alternatives Formulation: Lead the PDT in the combination of potential measures into alternatives and the screening of alternatives to arrive at the focused array of alternatives.
1.1.5. Evaluation of Alternatives: Compile information from PDT members on the costs, benefits and environmental impacts of potential alternatives
1.1.6. Comparison of Alternatives: Develop the system by which alternatives will be compared and the basis for the selection of the tentatively selected plan
1.1.7. Plan Selection: Provide the rationale for the tentatively selected plan
1.2. SMART Planning Products
1.2.1. Develop products necessary to comply with the USACE SMART planning process
1.2.1.1. Risk Register: Documents project risks, the steps to manage risk and the eventual outcome throughout the planning process.
1.2.1.2. Decision Management Plans: Provides the steps necessary to meet the next planning milestone

2. Economics
2.1. Estimate Economic Benefits of Alternatives
2.1.1. evaluate the baseline economic impacts of flooding and benefits of alternatives and the economic benefits of water supply based on the most likely alternative to be implemented in absence of the federal project
2.2. Develop Economic Models and Conduct Analyses
2.2.1. In coordination with Engineering and GIS, develop economic models necessary to conduct economic benefits analysis of flood risk management and water supply.
2.2.2. Develop data set for use in HEC-FDA model and run risk based analysis for Flood Damage Reduction measures. Work with GIS to match up previous inventory data to the most current assessor data available. Inventory downtown Boise and commercial/industrial structures. Compute depreciated value using Corps approved methodology. Work with H&H, and GIS staff to load data into HEC-FDA model. Beta test model, run and evaluate results. Perform risk based FRM model run using HEC-FDA. Evaluate results and write up assumptions and conclusions resulting from model runs.
2.3. Evaluate Flood Damages prevented using existing Average Annual Damage model. Provide FRM benefit estimation for each alternative/measure as differentiated by flow data provided by engineering. Results will be order of magnitude level using existing data. Analysis will be used for initial screening of alternatives/measures.
2.4. Water supply Identify Study Area affected by water supply changes, Estimate Future M&I Water Supplies, Project Future M&I Water Use, Identify Deficit between Future Water

Supplies and Use. Identify Alternatives Without Federal Plan, Rank and Display Alternative Plans based on Least Cost Analysis, Identify Most Likely Alternative, Compute M&I Water Supply Annualized Benefits. Research existing water supply data and reports from Bureau of Reclamation and State of Idaho. Determine if existing information on water supply and projections meet Corps requirements. Review existing information to determine if further data is needed.

2.5. Hydropower Analysis Work with NWW H&H, NWD HAC, Seattle City Light, and Idaho Power to analyze hydropower benefits or impacts from site power and system power.

2.6. Recreation Benefits Review existing recreation use, estimate affect on current recreation use and project future with-project conditions and affect on recreation. Use existing data to assign value to net affects.

2.7. Agriculture Benefits Determine if water will be available for irrigation. If with-project condition significantly affects irrigation water, then determine existing agriculture uses and benefits, estimate with and without project future conditions. Work with Bureau of Reclamation and use their data, or contract with Bureau of Reclamation for Agriculture Benefit estimation.

2.8. Employment Benefits Determine total economic effects on Employment for with-project conditions. Compute RED affects provided by with-project condition.

2.9. Socio-Economic affects- Evaluate Socio-Economic effects of with-project conditions and evaluate affects. Examine population trends, determine in benefits or cost disproportionally accrue to a single category. Determine if with-project condition generate significant Intensification benefits, and quantify the benefits is significant. Determine if with-project condition generate significant Location benefits, and quantify the benefits is significant. Determine projected land use changes between with and without project conditions.

3. Environmental Effects Analysis

3.1. Environmental Impact Statement

3.1.1. Conduct steps necessary to ensure compliance with the National Environmental Policy Act (NEPA) including:

3.1.1.1. Publish Notice Of Intent
3.1.1.2. Conduct Public Scoping / Public Meeting
3.1.1.3. Write Purpose and Need
3.1.1.4. Update Existing Conditions
3.1.1.5. Conduct Environmental Affects Analysis
3.1.1.6. Prepare Mitigation Plan
3.1.1.7. Prepare Monitoring and AM Plan
3.1.1.8. Conduct Public Meetings (Draft EIS)
3.1.1.9. Prepare Final EIS
3.1.1.10. Write Record of Decision
3.1.1.11. Publish Notice of Availability

3.2. Fish and Wildlife Coordination Act (FWCA) Consultation

3.2.1. Conduct coordination pursuant to FWCA compliance and provide summary for report

3.3. ESA Consultation / Biological Assessment

3.3.1. Consult with Fish and Wildlife Service on the Endangered Species Act and prepare Biological Assessment

3.4. Clean Water Act Consultation

3.4.1. Conduct consultation on Clean Water Act and provide summary for report

4. Cultural Resources and Tribal Consultation

4.1. Collect existing cultural resources information and conduct on-site investigations if necessary

4.2. Determine potential effects of alternatives on cultural resources

4.3. Provide write-up for inclusion in feasibility report / EIS

4.4. National Historic Preservation Act Consultation

4.4.1. Consult with State Historic Preservation Officers and Tribal Historic Preservation Officers as appropriate. Provide summary of consultation for report.
4.4.2. Develop MOA to address adverse effects to National Register listed and eligible properties including Arrowrock Dam
4.5. Conduct Consultation with Native American Tribes
4.5.1. Initiate and support consultation with Native American Tribes on the study and alternatives

5. Engineering Analyses
5.1. Geotechnical Surveys, Analyses, and Design Considerations
5.1.1. Reference Material Review: Review all design data, dam safety reports and evaluations associated with Arrowrock Dam. Include a review of instrumentation data. Further, investigate Teddy Roosevelt Dam raise project and consult with applicable USBR representatives.
5.1.2. Surveys and analyses to assess the feasibility of alternatives (including a potential dam raise) and to assist in design of project features
5.1.2.1. Perform detailed geologic mapping in both abutments and lower downstream foundation.
5.1.2.2. Perform investigation for construction aggregate material source and identify a possible source and potential haul road routes.
5.1.2.3. Determine seismic load for the new project. This information should be available through research.
5.1.2.4. Review slope conditions at proposed high water mark for the new reservoir.
5.1.2.5. Foundation Core Drilling
5.1.2.6. Existing Concrete Evaluation
5.1.2.7. Laboratory Testing of Concrete Samples
5.1.3. Water Diversion during Construction: Address how water will be diverted during construction. Modify existing outlets if possible or explore possibility of opening the old diversion tunnel.
5.1.4. Downstream cofferdam design: Address downstream cofferdam and what crest elevation will be required given operation of Lucky Peak Dam and the amount of diversion from Arrowrock dam.
5.1.5. Spillway design and location based on analysis from H&H: Address alternatives given location and existing foundation conditions.
5.1.6. Provide evaluation report to include: Site foundation conditions, including geologic data interpretation and evaluation of core logs, geologic mapping, and lab data analysis of rock physical properties and load capabilities.
5.1.7. Provide typical design for new levees and quantity estimates. Provide typical redesign of existing levees to increase conveyance capacity of the Boise River. Generate conceptual drawings.
5.1.8. Assist in the Consequence and Failure Mode Analysis and Preventative Measures

5.2. H&H Analyses and Design Considerations
5.2.1. Development of hydrologic data including design flood data.
5.2.2 Development and integration of existing HEC-RAS Models with USBR Riverware model (or other reservoir modeling software); Coordinate with USBR on use of their model. Includes substantial reservoir modeling for determining optimal storage allocation and operating rules.
5.2.3. Develop model scenarios to reflect the full range of the focused array of alternatives
5.2.4. Conduct analyses to determine H&H effects of various alternatives including hydraulic analysis for mapping of inundation areas for with and without project conditions to determine benefits.
5.2.5. Assist in development of economic model to forecast damages prevented.

5.2.6. Assist in the plan formulation and development of design details for alternatives including Arrowrock dam raise, levees, pit stabilization, replacement of bridges, alteration of diversion structures and replacement of push up dams.
5.2.7 Develop spillway and outlet design of any new or modified hydraulic structures.
5.2.8. Assist in the Consequence and Failure Mode Analysis and Preventative Measures
5.2.9. Provide write-up of results for Report

5.3. Structural Design Considerations
5.3.1. Provide design details that will allow for estimation of quantities and preparation of cost estimates for measures / alternatives including
5.3.1.1. Arrowrock Dam Raise
5.3.1.1.1. Concept-level design of spillway structures (piers, control structures, bridge)
5.3.1.1.2. Temporary Structures during construction (cofferdam, diversion tunnel gates/controls)
5.3.1.1.3. Stability Analysis
5.3.1.2. Irrigation Diversion Modifications
5.3.1.2.1. Concept-level desing for 4 basic sizes / configurations
5.3.1.3. Bridge Replacement
5.3.1.3.1. Concept-level design for 5 bridges
5.3.2. Develop 30% Design for Selected Plan
5.3.3. Assist in the Consequence and Failure Mode Analysis and Preventative Measures

5.4. GIS Analyses
5.5. Provide support for engineering, environmental, cultural, economics, and plan formulation including integration of GIS data, GIS analyses of impact areas, Economic Analyses and development of maps
5.5.1. Environmental Analysis: Overlay projected project footprint(s) with resource layers to assist in impacts assessment
5.5.2. Cultural Resources: Overlay projected project footprint(s) with cultural resource layers to assist in impacts assessment
5.5.3. Economics: Assist in the development of layers for existing structures in the floodplain and assist in the assessment of projected with and without project flood damages.

6. Cost Estimation
6.1. Provide general cost estimates for alternatives
6.2. Abbreviated Risk Analysis for Alternatives
6.3. Provide detailed (MCACES) estimate for selected plan
6.4. Formal Risk Analysis for selected plan
6.5. Feasibility Cost Report (including project schedule and TPCS).

7. Real Estate
7.1. Provide real estate cost estimates (gross order of magnitude) for alternatives in the feasibility phase
7.2. Procure title information for the proposed project lands
7.3. Obtain rights of entry for study investigations
7.4. Develop real estate acquisition strategy and drawings for selected plan
7.5. Provide real estate assessments and analysis for relocated utilities / facilities
7.6. Analysis and Application of Navigational Servitude
7.7. Perform a physical taking analysis (if needed)
7.8. Provide summary in Real Estate Plan

8. Reviews: The project manager will ensure that the following mandatory reviews are conducted for this project
8.1. District Quality Control

8.2. Agency Technical Review
8.3. Independent External Peer Review (Type I)
8.4. In Progress Reviews
8.5. Civil Works Review Board (if needed)

9. Project Management
9.1. The Project Manager will manage the schedule, budget, upward reporting and take the lead on coordination with the project sponsor

10. Project close-out
10.1. Following completion of the project, the PM will ensure that all necessary project close-out activities have been conducted and conduct an after action review with the PDT to document lesson learned.

11. Sponsor Work In Kind
11.1. The IDWR (representing the IWRB) will complete the following tasks on the study as work in kind:
11.1.1. Project Management: The IDWR will conduct any project management activities on the sponsor's end to manage the budget, schedule and resources, including documentation of work in kind throughout the process and coordination with the USACE PM.
11.1.2. Coordination with IWRB and IDWR staff: The PM for IDWR will ensure that the IWRB and IDWR management staff is updated on project status and any potential issues throughout the process.
11.1.3. Review and Comment on PDT deliverables: The sponsor will provide input on interim and draft products throughout the feasibility study process including input on the sponsor's preferred plan
11.1.4. Assist with Development of Future Without Project Condition: The sponsor will use their knowledge of ongoing activities within the basin and their own internal plans to assist with forecasting of the future without project condition over the period of analysis (100 years) including any reasonably foreseeable water conservation measures that will attenuate demand for water supply.
11.1.5. Assistance with Water Supply Modeling: Through their water rights accounting program, the IDWR will assist in the modeling of any potential impacts to groundwater and water supply to aid in the development of the feasibility study.

ATTACHMENT B
Schedule and Estimated Cost

Boise River General Investigation Feasibility Study

Cost Estimate by Task

Task	Subtasks	Resources	Cost Estimate	Start	Finish
FY13 Activities			**$125,000**	**Jul-13**	**Sep-13**
	Develop PMP and Amended FCSA		$30,000	Jul 13	Sep 13
	Preliminary Alternatives Formulation		$95,000	Jul-13	Sep-13
Project Management			**$60,000**	**Oct-13**	**Jul-17**
		Plan Formulation	$25,000	Oct 13	Jul-17
		Sponsor WIK	$25,000	Oct-13	Jun-17
	Coordination between IDWR and IWRB	Sponsor WIK	$10,000	Oct-13	Jun-17
Develop Combined Feasibility Report / EIS	**Develop Feasibility Report Sections**		**$401,000**	**Oct-13**	**Apr-17**
	Identify Problems and Opportunities	Plan Formulation	$5,000	Oct-13	May-14
	Identify Future Without Project Condition	Plan Formulation	$15,000	Jan-13	May-14
		Economics	$10,000	Jan-13	May-14
		Sponsor WIK	$15,000	Jan-13	May-14
	Identify Objectives and Constraints	Plan Formulation	$5,000	Oct-13	May-14
	Conduct Alternatives Formulation	Plan Formulation	$60,000	Oct-13	Jul-14
	Evaluation of Alternatives	Plan Formulation	$80,000	Jul-14	Jul-15
		Economics	$18,000	Jul-14	Jul-15
	Comparison of Alternatives	Plan Formulation	$45,000	Dec-14	Jul-15
		Economics	$25,000	Dec-14	Jul-15
	Plan Selection	Plan Formulation	$30,000	Dec-14	Jan-16
		Economics	$32,000	Dec-14	Jan-16
	Prepare Final Feasibility Report	Plan Formulation	$44,000	Jan-16	Apr-17
		Economics	$17,000	Jan-16	Apr-17
	Develop EIS Report Sections		**$280,000**	**Dec-13**	**Apr-17**
	Publish Notice of Intent	Environmental Compliance	$8,000	Dec-13	Dec-13
	Develop Draft EIS	Environmental Compliance	$160,000	Jan-13	Mar-15
	Prepare Final EIS	Environmental Compliance	$92,000	Mar-15	Apr-17
	Cultural Resources Analysis and Appendix	Cultural Resources	$20,000	Jul-14	Apr-17
	Reviews		**$367,000**	**Apr-15**	**Feb-17**
	Sponsor Reviews		$20,000	Apr-15	Feb-17
	District Quality Control	Mutliple	$36,000	Apr-15	May-15
	Agency Technical Review	MIPR	$75,000	Aug-15	Sep-15
		Cost Engineering	$6,000	Aug-15	Sep-15
	Independent External Peer Review	Contract	$190,000	Aug-15	Oct-15
	Milestone Meetings / IPRs	Plan Formulation	$30,000	Mar-14	Jan-16
	Civil Works Review Board	Plan Formulation	$10,000	Dec-16	Dec-16
Public Involvement / Agency Coordination			**$183,000**	**Jan-13**	**Mar-17**
	Conduct Public Scoping	Environmental Compliance	$24,000	Jan-13	Jan-13
	Conduct Public Meetings for Draft	Environmental Compliance	$40,000	Sep-15	Jan-16
	Public Review of Final EIS	Environmental Compliance	$28,000	Mar-17	Mar-17
	NHPA Consultation	Cultural Resources	$20,000	Jan-14	May-16
	Native American Consultation	Cultural Resources	$10,000	Jan-15	May-16
	ESA Consultation	Environmental Compliance	$24,000	Jan-14	May-16
	FWCA Consultation	MIPR	$25,000	Jan-14	May-16
	CWA Consultation	Environmental Compliance	$12,000	Jan-15	May-16
Surveys and Data Collection			**$264,000**	**Apr-14**	**Nov-14**
	Field Inventory of Existing Structures	Economics	$10,000	Apr-14	Apr-14
	H&H Data Preperation and Flood Flow Development	Hydrlogy & Hydraulic Engineering	$72,000	Jan-14	Nov-14
	Geologic Surveys and Core Sampling	Contract	$150,000	Aug-14	Sep-14
	Laboratory work for Geologic Samples	Contract	$32,000	Aug-14	Sep-14
Conduct Modeling and GIS Analyses			**$503,000**	**Oct-13**	**Jun-16**
	Reservoir Modeling for Alternatives Analysis	Hydrlogy & Hydraulic Engineering	$120,000	Jan-14	Dec-14
	Hydraulic Modeling for Alternatives Analysis	Hydrlogy & Hydraulic Engineering	$115,000	May-14	Dec-14
	Economic Modeling	Economics	$75,000	Jan-14	Dec-14
		Hydrlogy & Hydraulic Engineering	$70,000	Jan-14	Dec-14
	Water Supply Modeling	Sponsor WIK	$30,000	Aug-14	Dec-14
	GIS Modeling and Analyses	General Engineering	$75,000	Oct-13	Jun-16
	Model Documentation	Hydrlogy & Hydraulic Engineering	$18,000	Dec-14	Apr-15
Develop Cost Engineering Appendix			**$138,000**	**Apr-14**	**May-16**
	Cost Estimate for Alternatives	Cost Engineering	$78,000	Apr-14	Dec-14
	Cost Estimate for Selected Plan	Cost Engineering	$54,000	Jan-16	May-16
	Cost and Schedule Risk Analysis	Cost Engineering	$6,000	Jan-16	May-16
Develop Engineering Appendix			**$337,000**	**Jan-14**	**May-16**
	Participate in Alternatives Formulation and Analysis	Geotechnical Engineering	$29,000	Jan-14	Apr-15
		Hydrlogy & Hydraulic Engineering	$26,000	Jan-14	Apr-15
		Structural Engineering	$12,000	Jan-14	Apr-15
	Design Activities	Geotechnical Engineering	$28,000	Apr-15	May-16
		Hydrlogy & Hydraulic Engineering	$40,000	Apr-15	May-16
		Structural Engineering	$97,000	Apr-15	May-16
	Documentation	Geotechnical Engineering	$24,000	Apr-15	May-16
		Hydrlogy & Hydraulic Engineering	$40,000	Apr-15	May-16
		Structural Engineering	$41,000	Apr-15	May-16
Develop Real Estate Plan			**$302,000**	Jan-13	Apr-17
	Participate in Alternatives Formulation and Analysis	Real Estate	$20,000	Jan-13	Jan-16
	Procure Title Information	Real Estate	$80,000	Dec-14	May-15
	Gain Rights of Entry for Surveys	Real Estate	$5,000	Mar-14	Apr-14
	Real Estate Analysis of TSP	Real Estate	$40,000	Jul-15	Feb-17
	Prepare Real Estate Drawings	Real Estate	$20,000	Jul-15	Feb-17
	Relocations Survey	Real Estate	$27,000	Jul-15	Feb-17
	Land Costs Estimate	Real Estate	$80,000	Jul-15	Feb-17
	Documentation	Real Estate	$20,000	Jul 15	Apr 17
	Reviews	Real Estate	$10,000	Mar 15	May 16
Travel			**$30,000**	Oct-13	Ju -17
Printing			**$10,000**	Oct 13	J -17
Total			**$3,000,000**	J -13	Ju -17

Cost Sharing for the Boise GI Project
September 17, 2013

Following is a discussion of the potential sponsor cost-sharing requirements under various phases of the Boise River General Investigation project. It should be noted that there is no requirement for the sponsor to move into additional project phases if they do not choose to or do not have available funding. It should also be noted that a cost-sharing agreement can be terminated or suspended by either party once the funding is balanced to the correct proportion of the cost share.

Reconnaissance Phase
Cost Sharing: 100% federal funds (up to $100,000)

Feasibility Phase
Agreement: Feasibility Cost Sharing Agreement
Cost Sharing: 50% Federal / 50% Sponsor funds

Pre-construction Engineering and Design (PED) Phase
Agreement: Design Agreement
Cost Sharing: 75% Federal Funds / 25% Sponsor Funds
The 25% sponsor cost share in PED phase is a down payment on construction. These fees are wrapped into the Project Partnership Agreement and the sponsor will be required to provide the additional funding as cash or LERRD values under the construction cost-sharing.

Construction Phase
Agreement: Project Partnership Agreement
Cost Sharing for construction of a multi-purpose project for Flood Risk Management (FRM) and Water Supply would be dependent upon the allocation of total project costs for each project putpose (identified in the Feasibility Phase and further refined in the PED Phase).

Cost Sharing for FRM: 65-50% Federal Funds / 30-45% Sponsor Funds (depending on the value of LERRDs) + at least 5% Sponsor Cash

The sponsor would be required to provide, without cost to the government, all Lands, Easements, Rights of Way, Relocations and Disposal areas (LERRDs) necessary for the construction of the project and would receive credit for the costs associated. The sponsor will receive credit for the appraised value of the LERRDs which would be counted towards their cost-sharing for the FRM apportioned costs. In addition, at least 5% of the FRM apportioned costs are owed in cash. If the value of the LERRDs do not total at least 30% of the FRM apportioned costs, then the remaining balance is owed in cash. If the value of the LERRDs is above the 30%, then the cost-sharing is adjusted (up to 45% with 5% still owed in cash). Values of LERRDs above 45% are not credited or paid back to the sponsor. At the sponsor's request the USACE can assume the responsibility for attaining LERRDs and the sponsor can contribute the value of the LERRDs in cash.

Cost Sharing for Water Supply: 0% Federal Funds / 100% Sponsor Funds
Under USACE policy the Sponsor is required for 100% of the construction costs apportioned to Water Supply. USACE policy is that these costs are paid in cash during the construction phase, however it is allowable that the sponsor pay back the water supply apportioned costs over a period of 30 years with interest (rates established in WRDA '86)

Operations and Maintenance (O&M) Phase:
Cost Sharing: 0% Federal Funds / 100% Sponsor Funds
Following construction, the sponsor is required to pay for all costs associated with O&M of the completed project.

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
BOISE OUTREACH OFFICE, 720 PARK BOULEVARD, SUITE 225
BOISE, IDAHO 83712

August 17, 2013

Reply to Attention of:

Planning, Programs and Project Management Division

Mr. Roger Chase, Chairman
Idaho Water Resource Board
322 East Front Street
P.O. Box 83720
Boise, Idaho 83720-0098

Dear Mr. Chase:

This letter reports the Boise River Feasibility Study progress for the June 1, 2013, through August 31, 2013, quarter. This report is provided in accordance with Article IV.2. of the May 29, 2009, Federal Cost Share Agreement (FCSA) between the U.S. Army Corps of Engineers Walla Walla District (USACE) and the Idaho Water Resource Board. Total costs for the quarter were $76,333.10 for a total of $ 509,496.70 expended to date on the feasibility study. Total costs reflect total Federal funds expended and $26,869.39 in post-agreement in-kind services provided by Idaho Department of Water Resources (IDWR) staff in 2010. Table 1 in enclosure 1 summarizes costs expended and progress by task for the quarter. Table 2 in enclosure 1 describes funds expended, in-kind cost share credits, and balances to complete the study under our current agreement.

During this quarter, the project team developed the re-scoped Project Management plan, developed language for the amended Feasibility Cost Share Development and further refined potential study measures and alternatives including the development of general estimates of costs and benefits. Credit for IWRB in kind services was requested in the amount of $11,099.00. Of this, we are limited to a credit of $10,130.61 to reach the full agreed upon amount for in kind service in the existing Feasibility Cost Share Agreement. There is still a remaining balance of $27,503.30 credit against the pre-agreement in kind services. As the Corps has received Federal funding of $561,585.07 through the end of September 2013, sponsor funds are now required in the amount of $24,585.07 to balance the available study funds per the existing Feasibility Cost Sharing Agreement. This payment must be submitted by check payable to "FAO, USAED, WALLA WALLA & G4" to the District Engineer or by providing an Electronic Funds Transfer of the required funds in accordance with procedures established by the Government.

The next report of project funds will be issued in January 2014 for the period of September 1 through December 31, 2013. This will allow the project to align with standard reporting quarters. During this time, the team will be further refining the measures and alternatives to be looked at in the study and updating the Report Synopsis, Risk Register and Decision Management Plan to reflect these changes. If you have any questions about the study or information contained in this quarterly report, please contact Tim Fleeger, Project Manager at 509-572-7247 or Timothy.M.Fleeger@usace.army.mil. I am sending a copy of this letter to Mr. Patton, P.E., and Ms. Clarke, P.E. P.O. Box 83720, Boise, Idaho 83720-0098.

Sincerely,

Tim Fleeger, Project Manager
Walla Walla District Office

Fleeger/

Boen/

Kalamasz/PL

BOISE RIVER FEASIBILITY STUDY

Table 1. Summary of Work Completed and Costs Expended
June 1, 2012 through August 31, 2013 Period

Work Item	Staff Days	Approx. Percent Complete	Progress this Period	Cost this Period
Regional Planning Charette		100 %	Completed team review of Charette Documents.	$4,533.00
In Progress Review with USACE HQ		100%	Developed meeting materials, held IPR with USACE HQ, developed post-IPR memorandum for record.	$4,678.27
Update Project Management Plan		39%	Held Project Delivery Team meeting, refined initial array of Alternatives, began developing sections for PMP update.	$19,385.39
			TOTAL	**$28,596.66**

Table 2. Study Budget Summary
As of 9/1/2012

	Federal Funds	State Funds	State In-Kind [1]	TOTALS
Expended to date	$ 509,496.70	0	$ 509,496.70 [2]	$ 1,018,993.40
Remaining Balance	$ 360,503.30	$ 333,000	$ 27,503.30 [3]	$ 721,006.60
TOTALS	**$ 870,000.00**	**$ 333,000.00**	**$ 537,000.00**	**$ 1,740,000.00**

1. *In-kind comprised of $500,000 pre-agreement credit and $37,000 for post-agreement work.*
2. *Includes $26,869.39 credit for in-kind services performed by IDWR staff in 2010.*
3. *Comprised of $27,503.30 (balance of $500,000 pre-agreement credit) and $0 remaining post-agreement in-kind services.*