WaterSMART:
Water and Energy Efficiency Grants for FY 2013

FOA No. R13SF80003

Funding Group II

Middle Ditch Water Conservation and Renewable Energy Project

Franklin, ID

Cub River Irrigation Company
P.O. Box 215
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IV.C. EXECUTIVE SUMMARY & BACKGROUND DATA

1. Executive Summary

The executive summary should include:

- *The date, applicant name, city, county, and state.*
- *A one paragraph project summary that specifies the work proposed, including how project funds will be used to accomplish specific project activities and briefly identifies how the proposed project contributes to accomplishing the goals of this FOA (see Section III.B, "Eligible Projects" in the FOA).*
- *State the length of time and estimated completion date for the project.*

Start Date: September 1, 2013

Applicant: Cub River Irrigation Company
Franklin, Franklin County, Idaho

Project: Middle Ditch Water Conservation and Renewable Energy Project

Project Summary:

The Middle Ditch Water Conservation and Renewable Energy Project will pipe the Middle Ditch to conserve 2,800 acre-feet of water per year. This water will be left in the Bear River and assist in operating conditions at the Bear River Migratory Bird Refuge downstream. The piping of the Middle Ditch will increase pressures in the Middle Ditch system that delivers water to approximately 35 agricultural farmers. They have pressure fluctuations that will be alleviated by this project. The project will reduce pumping at the Hatch Pump station from 20 cfs to 7 cfs, as well as reduce pumping at the Bear River by the same amount. This project will also eliminate all pumping from the Haworth Pump Station which currently pumps 10 cfs. This will result in increased energy efficiency. A hydropower facility will also be installed as part of this project to take advantage of the energy that will need to be dissipated in the Middle Ditch pipeline. It will produce 2,000,000 to 2,500,000 kWh of energy equivalent and around $100,000 per year that would help offset the over $200,000 of pumping costs that the Cub River Irrigation Company currently spends to pump off of the Bear River. It will better manage 18,260 acre-feet per year. This project fits the WaterSMART: Water and Energy Efficiency Grants for FY 2013 very well as can be seen throughout this application.

Approximate Length: 32 Months

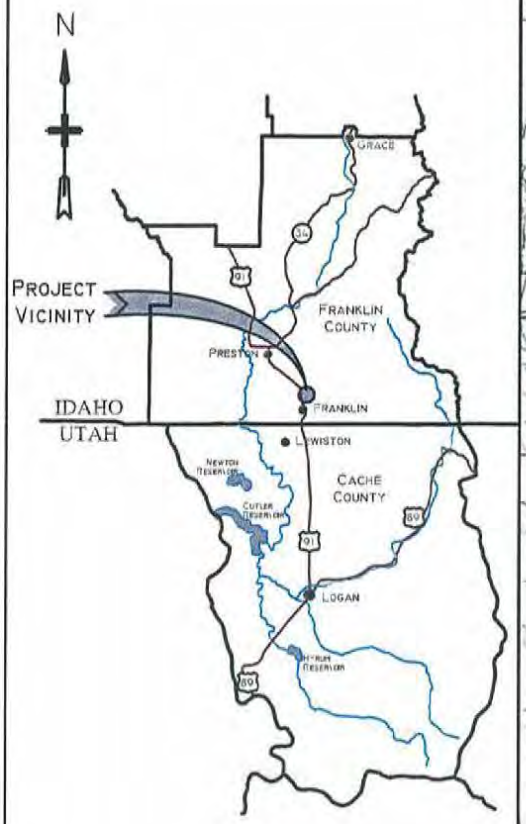
Completion Date: April 30, 2016

2. Background Data

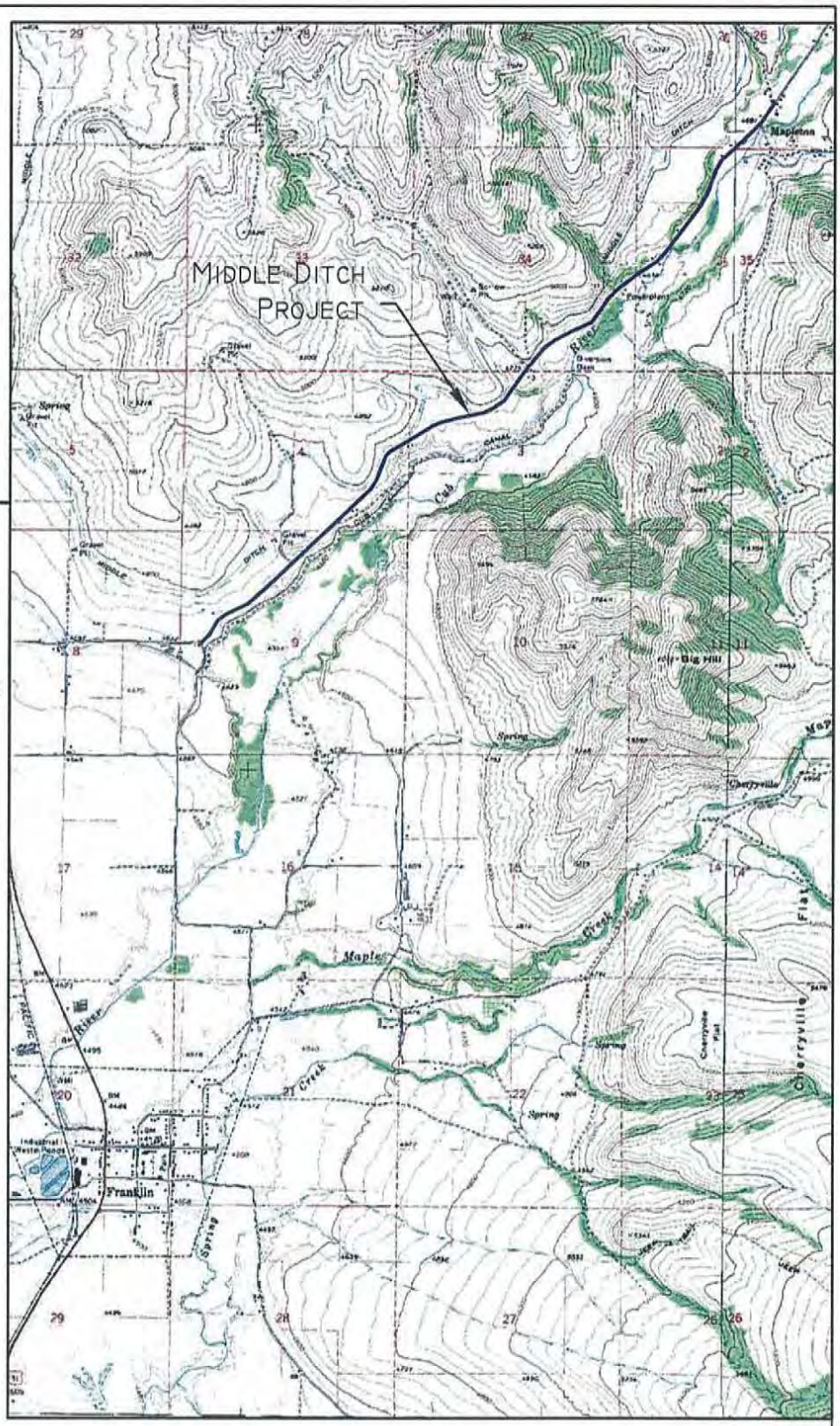
Location (state, county, and direction from nearest town)

Provide a map of the area showing the geographic location (include the State, county, and direction from nearest town).

The proposed project is located in Franklin County, Idaho near Franklin. Figure 1 shows the project location.



County Map



Project Area Map

FRANSON CIVIL ENGINEERS	DATE: DECEMBER 5, 2012 SCALE: Location Map.dwg H:\CLIENTS\9-North Utah Area\Cub River Irrigation Company\Middle Ditch Canyon Pipe\Drawings LAYOUT: Location Map (8x11)	CUB RIVER IRRIGATION COMPANY MIDDLE DITCH PIPING PROJECT	FIGURE 1 LOCATION MAP

Applicant's Water Supply

As applicable, describe the source of water supply, the water rights involved, current water uses (i.e., agricultural, municipal, domestic, or industrial), the number of water users served, and the current and projected water demand. Also, identify potential shortfalls in water supply. If water is primarily used for irrigation, describe major crops and total acres served.

The sources of water for the Cub River Irrigation Company are the Cub River and the Bear River. They are Idaho water rights. The water rights are as follows:

Water Right	Flow (cfs)	Priority Date	Source	Period of Use
13-26-B	38.36	4/01/1880	Cub River	4/15 to 10/15
13-2066	100	12/11/1914	Bear River	1/1 to 12/31
13-7279	25	5/3/1980	Bear River	5/1/ to 10/1

This project only affects the Cub River water right water. The Cub River flow is a direct flow right for 38.36 cfs. All water is currently used for agricultural purposes. This project will serve approximately 35 individual users. Corn, alfalfa, hay, and grain are the major crops with some additional specialty crops.

Current water demand in the project area is approximately 15,400 acre-feet. The water conserved by this project will be 2,800 acre-feet. The post project demand will be 12,600 acre-feet.

Describe Water Delivery System

In addition, describe the applicant's water delivery system as appropriate. For agricultural systems, please include the miles of canals, miles of laterals, and existing irrigation improvements (i.e., type, miles, and acres). For municipal systems, please include the number of connections and/or number of water users served and any other relevant information describing the system.

Currently, the local irrigators in the Middle Ditch Pressurized Irrigation System receive their water through approximately 6.5 miles of open ditch and canal called the Middle Ditch and from the Hatch and Haworth pump stations. The water, both pumped and from the canal, is injected into their piped networks, approximately 12.7 miles of pipe, and used to sprinkle irrigate their fields. The network services approximately 35 shareholders. During high demand, 45 cfs is needed to meet the needs of the water users. The demand is met as shown in the following table:

Source	Flow
Hatch Pump Station	20 cfs
Haworth Pump Station	10 cfs
Middle Ditch Canal	25 cfs (10 cfs of which is lost)
Total	**45 cfs**

The losses in the Middle Ditch over the 6.5 miles are 10 cfs. It takes 25 cfs of water diverted into the Middle Ditch to meet the rest of the 45 cfs demand. The individuals are metered on the system.

Renewable Energy or Energy Efficiency

If the application includes renewable energy or energy efficiency elements, describe existing energy sources and current energy uses.

The Cub River Irrigation Company currently pumps a lot of water from the Bear River and Cub River into canals where other pump stations inject water into piped systems that deliver water to shareholders. They have only been consumers of the energy to this point in their existence. With the implementation of this project, renewable energy and energy efficiency aspects will occur.

By delivering water through a pipe to the Middle Ditch Pressurized Irrigation System, many pumps will no longer need to be used. The Hatch Pump Station will reduce its pumping from around 20 cfs to around 7 cfs during high demand and the Haworth Pump Station will be eliminated altogether. The pressures from water being introduced into the system at the mouth of the canyon instead of at the base of the Middle Ditch will eliminate pumps throughout the system. This is energy efficiency.

A small hydropower plant will be installed at the base of the Middle Ditch and will be used to dissipate some of the excess energy as well as produce the power that will be used to offset the pumping cost that would continue to be needed at the Bear River for other parts of the Cub River Irrigation Company's system. It has been calculated that at $0.05 per kWh, based on the Cub River flow rights and the change in elevation, the turbines will produce between 2,000,000 kWh and 2,500,000 kWh per year, or in excess of $100,000 of power per year. This will assist in offsetting the pumping cost in excess of $200,000 per year the Cub River Irrigation Company currently pays.

Prior Work with Reclamation

Identify any past working relationships with Reclamation. This should include the date(s), description of prior relationships with Reclamation, and a description of the projects(s).

The Cub River Irrigation Company received $1,000,000 in Reclamation funding to complete the West Lewiston Pressurized Irrigation System. That project started the fall of 2011 and is nearing completion this spring 2013. It included converting approximately 4,500 acres of agricultural land into a pressurized irrigation system. When completed, the system will replace individual pumping throughout the system with a single pump station that operates more efficiently. Reclamation funding made that project a reality and has helped the Cub River Irrigation Company conserve water left in the Bear River. All Environmental Compliance work was completed early in the project without issues.

Previous to the West Lewiston Pressurized Irrigation Project the Cub River Irrigation Company has completed a project in partnership with Preston-Whitney Canal Company. Together, they installed a valve and meter station to interconnect the two pressurized irrigation systems. The system was completed in the spring of 2010. The project received approximately $78,000 in Reclamation funding.

3. Technical Project Description

The technical project description should describe the work in detail, including specific activities that will be accomplished as a result of this project. This description shall have sufficient detail to permit a comprehensive evaluation of the proposal.

Following environmental review and detailed design of the system, the project will begin by piping the Middle Ditch. A pipeline will be installed in the East Cub River Road in a straight run of 5.1 miles. This pipeline will carry water that has previously been delivered through the Middle Ditch Canal. This canal is a 6.5 mile winding canal with lots of surface area for seepage and evaporative losses. The 36-inch pipe will carry up to 38.23 cfs with velocities around 5 ft per second. This project will also solve canal safety issues that the canal poses in the canyon area, because the canal will no longer carry Cub River water and can be eliminated. By keeping the head loss to a minimum, the life of the pipe will be extended and the pressure head will provide

opportunities for a small hydropower facility to take advantage of the energy that will need dissipating. The turbine will produce 2,000,000 kWh or more power while still delivering irrigation water at 55 psi. 55 psi is a much needed pressure increase to the Cub River Irrigation users. By delivering a full 25 cfs from the Middle Ditch the Hatch Pump Station will be able to pump less, resulting in energy efficiency savings. The power produced will be sold or exchanged to Rocky Mountain Power for the pumping on the Bear River currently done by the Cub River Irrigation Company.

4. Evaluation Criteria

(See Section V for additional details. Including a detailed description of each criterion and subcriterion and points associated with each.)

The evaluation criteria portion of your application should thoroughly address each criterion and subcriterion in the order presented to assist in the complete and accurate evaluation of your proposal.

IV.D. PERFORMANCE MEASURES

(See Section VIII.A. for additional details) All WaterSMART Grant applicants are required to propose a method (or "performance measure") of quantifying the actual benefits of their project once it is completed. Actual benefits are defined as water actually conserved, marketed, or better managed, as a direct result of the project. Quantifying project benefits is an important means to determine the relative effectiveness of various water management efforts, as well as the overall effectiveness of WaterSMART Grants.

1. Environmental and Cultural Resources Compliance

To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants must respond to the following list of questions focusing on the NEPA, ESA, and NHPA requirements. Please answer the following questions to the best of your knowledge. If any question is not applicable to the project, please explain why. Additional information about environmental compliance is provided in Section IV.D.4. "Project Budget," under the discussion of "Environmental and Regulatory Compliance Costs," and in Section VIII.B., "Overview of Environmental and Cultural Resources Compliance Requirements."

Note: Applicants proposing a Funding Group II project must address the environmental and cultural resources compliance questions for their entire project, not just the first one-year phase.

If you have any questions, please contact your regional or area Reclamation office (see <http://www.usbr.gov/main/regions.html>) with questions regarding ESA compliance issues. You may also contact Dean Marrone, WaterSMART Program Coordinator, at 303-445-3577, for further information.

Note, if mitigation is required to lessen environmental impacts, the applicant may, at Reclamation's discretion, be required to report on progress and completion of these commitments. Reclamation will coordinate with the applicant to establish reporting requirements and intervals accordingly.

Under no circumstances may an applicant begin any ground-disturbing activities (including grading, clearing, and other preliminary activities) on a project before environmental compliance is complete and Reclamation explicitly authorizes work to proceed. This pertains to all components of the proposed project, including those that are part of the applicant's non-Federal cost chare. Reclamation will provide a successful applicant with information once environmental compliance is complete. An applicant that proceeds before environmental compliance is complete may risk forfeiting Reclamation funding under this FOA.

(1) Will the project impact the surrounding environment (i.e. soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

Work will include normal construction activity related to pipe installation and hydropower station construction. Contract documents will outline responsibility of a contractor relative to dust, air, and water pollution during construction activities. All construction will be in previously disturbed areas.

(2) Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

There are 3 birds, 1 fish, 2 flowering plants and 2 mammals listed as being present in Cache Valley that are known to be Federal threatened or endangered species, or designated critical habitat. Based on the proposed construction, none of the listed species will be affected by construction impacts. The construction will be in the existing road right-of-way.

(3) Are there wetlands or other surface water inside the project boundaries that potentially fall under CWA jurisdiction as "waters of the United States?" If so, please describe and estimate any impacts the project may have.

The pipeline will be constructed under the road. The National Wetlands Inventory has been searched and there will not be any construction within wetland areas. The inlet to the pipeline will occur off of the Middle Ditch and does not fall under CWA jurisdiction. The hydropower site will also be an offset of the Middle Ditch. We will be constructing the project on previously disturbed ground. There will be no impacts by this project.

(4) When was the water delivery system constructed?

This land was put into production in the late 1800s. The Middle Ditch was constructed in the 1870s. The date attached to the earliest water right is 1880.

(5) Will the project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

Based on the proposed project, the Middle Ditch will no longer be needed to convey Cub River water. The conserved water from this project will come from the previous losses of 10 cfs being used in the system and the pumps on the Bear River pumping 10 cfs less. The conserved water that will remain in the Bear River will be available for the migratory bird refuge operated by the U.S. Fish and Wildlife Service.

The Middle Ditch delivers water to the Middle Ditch Pressurized Irrigation System which was completed in 2007. This project will abandon that system's connection to the Middle Ditch and will be connected to the project's new pipeline.

(6) Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

The Middle Ditch is not on the National Register of Historic Places. It may be eligible for listing at some point, but the structure will not be affected in any way by this project.

(7) Are there any known archeological sites in the proposed project area?

There are no known archeological sites.

(8) Will the project have a disproportionately high and adverse effect on low income or minority populations?

This project will not have negative effects on low income or minority populations.

(9) Will the project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?

There are no sacred Indian sites within the project area.

(10)Will the project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

No, the project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species.

2. Required Permits or Approvals

Applicants must state in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.

Applicants proposing renewable energy components to Federal facilities should note that some power projects may require FERC permitting or a Reclamation Lease of Power Privilege. To complete a renewable energy project within the time frame required of this FOA, it is recommended that an applicant has commenced the necessary permitting process prior to applying. To discuss questions related to projects that propose renewable energy development, please contact Mr. Dean Marrone at 303-445-3577.

Note that improvements to Federal facilities that are implemented through any project awarded funding through this FOA must comply with additional requirements. The Federal government will continue to hold title to the Federal facility and any improvement that is integral to the existing operations of that facility. Please see Section III.H. Reclamation may also require additional approvals prior to award to ensure that any necessary easements, land use authorizations, or special permits can be approved consistent with the requirements of 43 CFR 429, and that the development will not impact or impair project operations or efficiency.

***(1)* Explain whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.**

A Franklin County permit will be obtained to construct the pipeline in the county road right-of-way.

A FERC permit will need to be pursued to produce the power. A small hydro conduit exemption will be pursued for this project. This project falls within the description of a small hydro conduit exemption. No other permits outside of normal construction permits should be needed. It is anticipated that the FERC permitting process will take up to one year to complete. FERC is currently attempting to streamline the process.

3. Official Resolution

Include an official resolution adopted by the applicant's board of directors or governing body, or for state government entities, an official authorized to commit the applicant to the financial and legal obligations associated with receipt of WaterSMART Grant financial assistance, verifying:

- *The identity of the official with legal authority to enter into agreement*
- *The board of directors, governing body, or appropriate official who has reviewed and supports the application submitted*
- *The capability of the applicant to provide the amount of funding and/or in-kind contributions specified in the funding plan*
- *That the applicant will work with Reclamation to meet established deadlines for entering into a cooperative agreement*

***An official resolution meeting the requirements set forth above is mandatory**. If the applicant is unable to submit the official resolution by the application deadline because of the timing of board meetings or other justifiable reasons, the official resolution may be submitted up to 30 days after the application deadline.*

See Official Resolution on next page.

OFFICIAL RESOLUTION
Of The
CUB RIVER IRRIGATION COMPANY REGARDING THE WATERSMART GRANT PROGRAM

RESOLUTION NO. 2013 - 1

WHEREAS, the United States Department of the Interior, Bureau of Reclamation has established the WaterSMART Water and Energy Efficiency Grants in order to prevent water supply crises and ease conflict in the western United States of American, and

WHEREAS, the United States Department of the Interior, Bureau of Reclamation has requested proposals from eligible entities to be included in the WaterSMART Program, and

WHEREAS, the Cub River Irrigation Company has need for funding to complete an irrigation and energy project that will upgrade a conveyance system and construct a hydropower structure so that water can be more efficiently delivered to the water users and green power can be produced.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the CUB RIVER IRRIGATION COMPANY agrees and authorizes that we:

1. Have reviewed and supports the proposal submitted; and

2. Are capable of providing the amount of funding and/or in-kind contributions, specified in the funding plan; and

3. If selected for a WaterSMART Grant, will work with Reclamation to meet established deadlines for entering into a cooperative agreement.

DATED: 1-11-2013

Eden M. Roberts
Authorized Signature(s)

ATTEST:

L Fran

4. Project Budget

The project budget includes: (1) Funding Plan and Letters of Commitment, (2) Budget Proposal, (3) Budget Narrative and (4) Budget Form.

Funding Plan and Letters of Commitment

Describe how the non-Reclamation share of project costs will be obtained. Reclamation will use this information in making a determination of financial capability.

Project funding provided by a source other than the applicant shall be supported with letters of commitment from these additional sources. This is a ***mandatory requirement****. Letters of commitment shall identify the following elements:*

(1) The amount of funding commitment
(2) The date the funds will be available to the applicant
(3) Any time constraints on the availability of funds
(4) Any other contingencies associated with the funding commitment

Commitment letters from third party funding sources should be submitted with your project application. If commitment letters are not available at the time of the application submission, please provide a timeline for submission of all commitment letters. Cost share funding from sources outside the applicant's organization (e.g., loans or state grants), should be secured and available to the applicant prior to award.

Reclamation will not make funds available for a WaterSMART Grants project until the recipient has secured non-Federal cost-share. Reclamation will execute a financial assistance agreement once non-Federal funding has been secured or Reclamation determines that there is sufficient evidence and likelihood that non-Federal funds will be available to the applicant subsequent to executing the agreement.

Note: Applicants proposing a Funding Group II project are not required to have non-Federal cost share funding secured for the entire project at the time of award. Funding Group II applicants must demonstrate sufficient evidence that non-Federal cost-share for the first year of the project will be available by the start of that phase and must describe a plan and schedule for securing non-Federal funding for subsequent years of the project.

Funding is being pursued from the State of Idaho, Water Resource Board ($2,226,000) concurrent with this application. Cub River Irrigation Company has received funds from this agency in the past and is in good standing with them. A letter of commitment will be secured by July 1, 2013.

The funding plan must include all project costs, as follows:

(1) How you will make your contribution to the cost share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments).

The Cub River Irrigation Company will contribute $300,000 to the total project cost. Just over half of this will come from in-kind services and the company doing some of the construction work themselves. The rest will come from the company's reserve account in actual dollars contributed to the project, which comes from assessments of shareholders.

Cub River Irrigation Company owns and operates a track-hoe and dump truck that will be used during construction.

The remaining funds will come through time donated to the project by its on-site representatives during construction. Local staff will be on-site daily to assist with construction observation and documentation.

(2) Describe any in-kind costs incurred before the anticipated project start date that you seek to include as project costs. Include: (a) What project expenses have been incurred (b) How they benefitted the project (c) The amount of the expense (d) The date of cost incurrence

N/A

(3) Provide the identity and amount of funding to be provided by funding partners, as well as the required letters of commitment.

State of Idaho – Water Resource Board - $2,226,000 – Letter expected by July 1, 2013

(4) Describe any funding requested or received from other Federal partners. Note: other sources of Federal funding may not be counted towards your 50 percent cost share unless otherwise allowed by statute.

There are no other Federal sources of funding.

(5) Describe any pending funding requests that have not yet been approved, and explain how the project will be affected if such funding is denied.

If the funds are not secured from USBR and/or the State of Idaho, the project will not move forward at this point. The energy production capabilities may make the project feasible in the future if other funding opportunities become available.

Please include the following chart (table 1) to summarize your non-Federal and other Federal funding sources. Denote in-kind contributions with an asterisk (*). Please ensure that the total Federal funding (Reclamation and all other Federal sources) does not exceed 50 percent of the total estimated project cost.

Table 1. Summary of non-Federal and Federal funding sources

Funding Sources	Funding Amount
Non-Federal Entities	
1. State of Idaho – Water Resource Board	$2,226,000
2. Local Contribution (In-kind Services)	$172,000*
3. Local Contribution (Cash)	$128,000
Non-Federal Subtotal:	
Other Federal Entities	
1. None	$0.00
Other Federal Subtotal:	$0.00
Requested Reclamation Funding:	$1,500,000
Total Project Funding:	$4,026,000

For applicants submitting a proposal under Funding Group II, please include the following chart (table 2) to summarize your Federal funding request by year.

Table 2. Funding Group II Funding Request

Funding Group II Request			
	Year 1 (FY 2013)	**Year 2 (FY 2014)**	**Year 3 (FY 2015)**
Funding Requested	$250,000	$750,000	$500,000

Schedule of Work

Year 1 – Environmental Compliance work, FERC permitting work, and Engineering Design.

Year 2 – Construction of pipeline.

Year 3 – Construct remainder of pipeline, construction of the hydropower facility, and transmission line work.

Budget Proposal

The project budget shall include detailed information on the categories listed below and must clearly identify all project costs. Unit costs shall be provided for all budget items including the cost of work to be provided by contractors. Additionally, applicants shall include a narrative description of the items included in the project budget, including the value of in-kind contributions of goods and services provided to complete the project. It is strongly advised that applicants use the budget proposal format shown below on tables 3 and 4 or a similar format that provides this information.

Table 3. Funding Sources

Funding Sources	Percent of Total Project Cost	Total Cost by Source
Recipient Funding	62.74%	$2,526,000
Reclamation Funding	37.26%	$1,500,000
Other Federal Funding		
Totals	**100%**	**$4,026,000**

See below for Budget Proposal.

Table 4. Budget Proposal

Budget Item Description	Computation		Quantity Type (hours/days)	Total Cost
	$/Unit	Quantity		
Salaries And Wages				
Employee 1	$40/hr	900	Hours	$36,000
Employee 2	$40/hr	900	Hours	$36,000
Fringe Benefits				
Travel				
Equipment				
Item A – Track Hoe	$100/hr	500	Hours	$50,000
Item B – Dump Truck	$100/hr	500	Hours	$50,000
Supplies/Materials				
Contractual/Construction [1]				
Engineering Design	See Appendix			$251,000
Transmission Line Upgrade			Lump Sum	$300,000
FERC Permitting	See Appendix			$60,000
Contractor - Construction	See Appendix			$2,959,000
Construction Observation	See Appendix			$169,000
Environmental and Regulatory Compliance	2% of Construction Cost			$63,000
Other				
Reporting	See Appendix			$22,000
Legal and Administrative	See Appendix			$30,000
Total Direct Costs				$4,026,000
Indirect Costs - __%				
Total Project Costs				$4,026,000

[1] Contracts should be broken out into specific line items. You may attach a separate, detailed budget for each contract to adequately address all contractor budget items.

Budget Narrative

Submission of a budget narrative is mandatory. An award will not be made to any applicant who fails to fully disclose this information. The budget narrative provides a discussion of, or explanation for, items included in the budget proposal. Include the value of in-kind contributions of goods and services and sources of funds provided to complete the project. The types of information to describe in the narrative include, but are not limited, to those listed in the following subsections.

Salaries and Wages

Indicate program manager and other key personnel by name and title. Other personnel may be indicated by title alone. For all positions, indicate salaries and wages, estimated hours or percent of time, and rate of compensation proposed. The labor rates should identify the direct labor rate separate from the fringe rate or fringe cost for each category. All labor estimates, including any proposed subcontractors, shall be allocated to specific tasks as outlined in the recipient's technical project description. Labor rates and proposed hours shall be displayed for each task.

Clearly identify any proposed salary increases and the effective date.

Generally, salaries of administrative and/or clerical personnel will be included as a portion of the stated indirect costs. If these salaries can be adequately documented as direct costs, they should be included in this section; however, a justification should be included in the budget narrative.

We anticipate having two Cub River Irrigation Company employees provide construction review services. These employees do not earn a salary and are volunteers for the irrigation company. The in-kind rate was based on

Title	Rate	Hours
On-Site Representative	$40	1,800

An engineering firm will be hired to provide design engineering services. Since the project has not been awarded, we are unable to determine the exact time and cost breakdown for the engineering firm. If Franson Civil Engineers is retained for the project, the following is the cost breakdown for their firm. An average billable rate was calculated for the firm and the percent of the billable rate dedicated to wages, benefits, overhead, and profit have been listed. See Appendix A for the full Franson Civil Engineers manpower estimate.

	Billable Rate	Wage	Benefits	Overhead	Profit
Average for All Billable Rates	$90	30%	15%	40%	15%

Contractors have not yet bid on this project; therefore, no salary and wage data are available for construction. The cost estimate in the appendix is based on the engineer's estimate of probable construction costs.

Fringe Benefits

Indicate rates/amounts, what costs are included in this category, and the basis of the rate computations. Indicate whether these rates are used for application purposes only or whether they are fixed or provisional rates for billing purposes. Federally approved rate agreements are acceptable for compliance with this item.

Not Included

Travel

Include purpose of trip, destination, number of persons traveling, length of stay, and all travel costs including airfare (basis for rate used), per diem, lodging, and miscellaneous travel expenses. For local travel, include mileage and rate of compensation.

Not Included

Equipment

Itemize costs of all equipment having a value of over $5,000 and include information as to the need for this equipment, as well as how the equipment was priced if being purchased for the agreement. If equipment is being rented, specify the number of hours and the hourly rate. Local rental rates are only accepted for equipment actually being rented or leased for the project. If equipment currently owned by the applicant is proposed for use under the proposed project, and the cost to use that equipment is being included in the budget as in-kind cost share, provide the rates and hours for each piece of equipment owned and budgeted. These should be ownership rates developed by the recipient for each piece of equipment. If these rates are not available, the U.S. Army Corp of Engineer's recommended equipment rates for the region are acceptable. Blue book, Federal Emergency Management Agency (FEMA), and other data bases should not be used.

Cub River owns and operates a track-hoe and dump truck. It is anticipated that the equipment will be used during construction. The track-hoe and dump truck will be used together for much of the project.

Title	Rate	Hours
Track-hoe	$100	500
Dump Truck	$100	500

Materials and Supplies

Itemize supplies by major category, unit price, quantity, and purpose, such as whether the items are needed for office use, research, or construction. Identify how these costs were estimated (i.e., quotes, past experience, engineering estimates or other methodology).

Not Included

Contractual

Identify all work that will be accomplished by subrecipients, consultants, or contractors, including a breakdown of all tasks to be completed, and a detailed budget estimate of time, rates, supplies, and materials that will be required for each task. If a subrecipient, consultant, or contractor is proposed and approved at time of award, no other approvals will be required. Any changes or additions will require a request for approval. Identify how the budgeted costs for subrecipients, consultants, or contractors were determined to be fair and reasonable.

Several portions of the project will use consultants and contractors. First, a design engineer will be retained to provide design engineering services as well as construction management and observation services. Second, a construction contractor will be solicited to assist in the installation of the facilities. Several subcontractors will be used throughout the construction of the project. Third, Rocky Mountain Power will upgrade the transmission lines for the produced power to make it to the grid. The detailed engineering and construction cost estimates are in the appendix.

Environmental and Regulatory Compliance Costs

Applicants must include a line item in their budget to cover environmental compliance costs. "Environmental compliance costs" refer to costs incurred by Reclamation or the recipient in complying with environmental regulations applicable to a WaterSMART Grant, including costs associated with any required documentation of environmental compliance, analyses, permits, or approvals. Applicable Federal environmental laws could include NEPA, ESA, NHPA, and the CWA, and other regulations depending on the project. Such costs may include, but are not limited to:

- *The cost incurred by Reclamation to determine the level of environmental compliance required for the project*
- *The cost incurred by Reclamation, the recipient, or a consultant to prepare any necessary environmental compliance documents or reports*
- *The cost incurred by Reclamation to review any environmental compliance documents prepared by a consultant*
- *The cost incurred by the recipient in acquiring any required approvals or permits, or in implementing any required mitigation measures*

The amount of the line item should be based on the actual expected environmental compliance costs for the project. However, the minimum amount budgeted for environmental compliance should be equal to at least 1-2 percent of the total project costs. If the amount budgeted is less than 1-2 percent of the total project costs, you must include a compelling explanation of why less than 1-2 percent was budgeted.

How environmental compliance activities will be performed (e.g., by Reclamation, the applicant, or a consultant) and how the environmental compliance funds will be spent, will be determined pursuant to subsequent agreement between Reclamation and the applicant. If any portion of the funds budgeted for environmental compliance is not required for compliance activities, such funds may be reallocated to the project, if appropriate.

Environmental costs are expected to be minimal and 2% was used as a cost estimate. Environmental compliance would be performed by Reclamation.

Reporting

Recipients are required to report on the status of their project on a regular basis. Failure to comply with reporting requirements may result in the recipient being removed from consideration for funding under future funding opportunities. Include a line item for reporting costs (including final project and evaluation costs). Please see Section VI.C. for information on types and frequency of reports required.

$22,000 will be used at the end of the project to create the final report. This money will also be used for quarterly and annual reports, as well as to coordinate requests for reimbursement.

Other

Any other expenses not included in the above categories shall be listed in this category, along with a description of the item and what it will be used for. No profit or fee will be allowed.

Not Included

Indirect Costs

Show the proposed rate, cost base, and proposed amount for allowable indirect costs based on the applicable OMB circular cost principles (see Section III.E., "Cost Sharing Requirement") for the recipient's organization. It is not acceptable to simply incorporate indirect rates within other direct cost line items.

If the recipient has separate rates for recovery of labor overhead and general and administrative costs, each rate shall be shown. The applicant should propose rates for evaluation purposes, which will be used as fixed or ceiling rates in any resulting award. Include a copy of any federally approved indirect cost rate agreement. If a federally approved indirect

rate agreement is not available, provide supporting documentation for the rate. This can include a recent recommendation by a qualified certified public accountant (CPA) along with support for the rate calculation.

If you do not have a federally approved indirect cost rate agreement, or if unapproved rates are used, explain why, and include the computational basis for the indirect expense pool and corresponding allocation base for each rate. Information on "Preparing and Submitting Indirect Cost Proposals" is available from Interior, the National Business Center, and Indirect Cost Services, at http://www.aqd.nbc.gov/services/ICS.aspx.

Not Included

Total Costs

Indicate total amount of project costs, including the Federal and non-Federal cost-share amounts.

The total project costs are estimated at $4,026,000.

Budget Form

In addition to the above-described budget information, the applicant must complete an SF-424A, Budget Information—Nonconstruction Programs, or an SF-424C, Budget Information—Construction Programs. These forms are available at <http://apply07.grants.gov/apply/FormLinks?family=15>.

See Table of Contents for location of the SF-424C, Budget Information – Construction Programs Form.

IV.E. FUNDING RESTRICTIONS

See Section III.E.3 for restrictions on incurrence and allowability of pre-award costs.

V.A. TECHNICAL PROPOSAL: EVALUATION CRITERIA

The Evaluation Criteria portion of your application should thoroughly address each of the following criterion and subcriterion in the order presented to assist in the complete and accurate evaluation of your proposal. (Note: it is suggested that applicants copy and paste the below criteria and subcriteria into their applications to ensure that all necessary information is adequately addressed). ***Applications will be evaluated against the Evaluation Criteria (listed below), which comprise 100 points of the total evaluation weight.*** *Please note that projects may be prioritized to ensure balance among the program Task Areas and to ensure that the projects address the goals of the WaterSMART program.*

V.A.1. Evaluation Criteria A: Water Conservation

Up to 28 points may be awarded for a proposal that will conserve water and improve efficiency. Points will be allocated to give consideration to projects that are expected to result in significant water savings.

Subcriterion No. A.1—Water Conservation:

For projects with quantifiable and sustained water savings, please respond to Subcriterion No. 1(a)—Quantifiable Water Savings described in this subsection. If the project does not result in quantifiable water savings but will improve water management, please respond to Subcriterion No. 1(b)—Improved Water Management described in this subsection. If the project has separate components that will result in both quantifiable water savings and improved water management, an applicant may respond to both Subcriteria No. A.1(a) and (b). However, an applicant is limited to 20 points total under both Subcriteria No. A.1(a) and (b).

Subcriterion No. A.1(a) – Quantifiable Water Savings

Up to ***20 points*** *may be allocated based on the quantifiable water savings expected as a result of the project.*

Describe the amount of water saved. *For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project. Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations. Please be sure to consider the questions associated with your project type (listed below) when determining the estimated water savings, along with the necessary support needed for a full review of your proposal (please note, the following is not an exclusive list of eligible project types. If your proposed project does not align with any of the projects listed below, please be sure to provide support for the estimated project benefits, including all supporting calculations and assumptions made).*

In addition, all applicants should be sure to address the following:

- *What is the applicant's average annual acre-feet of water supply?*

The Cub River Irrigation Company's average annual acre-feet of water supply for this area is 18,260 acre-feet.

- *Where is that water currently going (i.e., back to the stream, spilled at the end of the ditch, seeping into the ground, etc.)?*

This water seeps into the ground as it is used for irrigation purposes.

- *Where will the conserved water go?*

The conserved water will not be pumped from the Bear River. It will remain in the Bear River and continue downstream to help in the operation of the Migratory Bird Refuge.

Please address the following questions according to the type of project you propose for funding.

(1) Canal Lining/Piping: *Canal lining/piping projects can provide water savings when irrigation delivery systems experience significant losses due to canal seepage. Applicants proposing lining/piping projects should address the following:*

- **How has the estimated average annual water savings that will result from the project been determined? Please provide all relevant calculations, assumptions, and supporting data.**

All users on this system are metered. The demand in the area through much of the irrigation season is 45 cfs. A pump station called the Hatch Pump Station near the bottom of the system pumps 20 cfs into the system during these high demand days. The Haworth Pump Station off of the Cub River pumps 10 cfs into the system. The Middle Ditch has a measurement structure on the ditch. 25 cfs is turned into the Middle Ditch System, 10 cfs of which is lost to seepage and/or evaporation, to deliver the final 15 cfs of the demand. The following equation illustrates the losses:

$$Pumps\ (30\ cfs) + Middle\ Ditch\ (25\ cfs) - Middle\ Ditch\ Losses\ (10\ cfs) = Demand\ (45\ cfs)$$

The 10 cfs is lost over approximately 140 days, resulting in a project savings of 2,800 acre-feet per year.

- **How have average annual canal seepage losses been determined? Have ponding and/or inflow/outflow tests been conducted to determine seepage rates under varying conditions? If so, please provide detailed descriptions of testing methods and all results. If not, please provide an explanation of the method(s) used to calculate seepage losses. All estimates should be supported with multiple sets of data/measurements from representative sections of canals.**

The average annual canal losses have been determined by measuring the inflows against the outflow demands. The difference has been determined to be losses in the system. Actual seepage rates based on infiltration and evaporation have not been performed at this time. The measurements currently on the system provide a very clear picture of the losses that have been looked at closely. See previous question for equation of the losses.

- **What are the expected post-project seepage/leakage losses and how were these estimates determined? (e.g. can data specific to the type of material being used in the project be provided?)**

The pipe material has been preliminarily determined to be PVC C905. With good construction practices and good construction observation, the losses due to seepage and evaporation will be near zero through our project.

- **What are the anticipated annual transit loss reductions in terms of acre-feet per mile for the overall project and for each section of canal included in the project?**

The loss reductions are going to be 430 acre-feet per mile each year by not putting the water into the 6.5 miles of canal.

$$\frac{2{,}800\ ac-ft}{6.5\ miles} = 430\ ac-ft\ per\ mile$$

- **How will actual canal loss seepage reductions be verified?**

At the end of the project, the inflow into the system from the Middle Ditch will be between 25 cfs and 38.23 cfs (the full water right). The Hatch Pump Station will continue to pump during high demand, but only around 7 to 10 cfs instead of 20 cfs. The Haworth Pump Station will be eliminated. This will verify the water savings. The saved water will not be pumped from the Bear River and will remain for the Migratory Bird Refuge.

- **Include a detailed description of the materials being used.**

It has been determined that the 36-inch pipe will be PVC C905. The hydropower facility has not been designed yet. The engineering firm will perform quality control on the materials to be used in the project.

(2) ***Municipal Metering:*** *Municipal metering projects can provide water savings when individual user meters are installed where none exist to allow for unit pricing and when new meters are installed within a distribution system to assist with leakage reduction. Applicants proposing municipal metering projects should address the following:*

N/A – All users in this project area are already metered.

(3) ***Irrigation Flow Measurement:*** *Irrigation flow measurement improvements can provide water savings when improved measurement accuracy results in reduced spills and over-deliveries to irrigators. Applicants proposing irrigation flow measurement projects should address the following:*

N/A – The Middle Ditch system already has flow measurement on it.

(4) ***SCADA and Automation:*** *SCADA and Automation components can provide water savings when irrigation delivery system operational efficiency is improved to reduce spills, over-deliveries, and seepage. Applicants proposing SCADA and automation projects should address the following:*

N/A – This project is already on a SCADA system.

(5) ***Groundwater Recharge:*** *Groundwater recharge can provide savings when surface water storage evaporation is reduced and/or surface runoff is intercepted for recharge. Applicants proposing groundwater recharge projects should address the following:*

N/A

(6) ***Landscape Irrigation Measures:*** *Landscape irrigation measures can provide water savings by reducing outdoor water usage. These measures include turf removal, Smart irrigation controllers (i.e., weather or soil-moisture based) and high-efficiency nozzles (e.g., sprinkler heads).*

N/A

(7) ***High-Efficiency Indoor Appliances and Fixtures:*** *Installing high-efficiency indoor appliance and fixtures can provide water savings for municipal water entities where there is significant potential for replacing existing non-efficient indoor appliances and fixtures. Applicants proposing high-efficiency indoor appliance and fixtures projects should address the following:*

N/A

(8) ***Other Project Types Not Listed Above:*** *Projects to provide water savings for irrigation and municipal water systems other than those listed above will considered and evaluated based on the amount of estimated water savings and the adequacy of the description of how the savings are estimated. Applicants proposing these types of projects should address the following items:*

N/A

AND/OR

Subcriterion No. A.1(b) – Improved Water Management

Up to 5 points may be awarded if the proposal will improve water management through measurement, automation, advanced water measurement systems, or through implementation of a renewable energy project, or through other approaches where water savings are not quantifiable.

Describe the amount of water better managed. *For projects that improve water management but which may not result in measurable water savings,* ***state the amount of water expected to be better managed, in acre-feet per year and as a percentage of the average annual water supply.*** *(The average annual water supply is the amount actually diverted, pumped, or released from storage, on average, each year. This does not refer to the applicant's total water right or potential water supply.) Please use the following formula:*

$$\frac{\textit{Estimated Amount of Water Better Managed}}{\textit{Average Annual Water Supply}} \qquad \frac{18{,}260 \text{ ac-ft}}{18{,}260 \text{ ac-ft}} = 100\%$$

A change in the way this system operates will occur due to the implementation of hydropower. Cub River will be able to put their whole water right through the pipe and turbines during the irrigation season. They will produce power from it and reduce the losses on the entire amount. Furthermore, they will now be able to put to use a 12 cfs flow right during the winter. All of this water will be better managed.

Subcriterion No. A.2 – Percentage of Total Supply

Up to 4 additional points may be allocated based on the percentage of the applicant's total average water supply (i.e., including all facilities managed by the applicant) that will be conserved directly as a result of the project.

Provide the percentage of total water supply conserved: *State the applicant's total average annual water supply in acre-feet. Please use the following formula:*

$$\frac{\textit{Estimated Amount of Water Conserved}}{\textit{Average Annual Water Supply}} \qquad \frac{2{,}800 \text{ ac-ft}}{18{,}260 \text{ ac-ft}} = 15.3\%$$

Based on actual diversion records and demands as previously discussed, approximately 2,800 acre-feet of the 18,260 acre-feet or 15.3% of the total average annual water supply will be conserved.

Subcriterion No. A.3 – Reasonableness of Costs

Up to ***4 additional points*** *may be awarded for the reasonableness of the cost for the benefits gained.*

Please include information related to the total project cost, annual acre-feet conserved (or better managed), and the expected life of the improvement. Use the following calculation:

$$\frac{\textit{Total Project Cost}}{\textit{(Acre-Feet Conserved, or Better Managed x Improvement Life)}}$$

Failure to include this required calculation will result in no score for this section.

For all projects involving physical improvements, specify the expected life of the improvement in number of years and provide support for the expectation (e.g. manufacturer's guarantee, industry accepted life-expectancy, description of corrosion mitigation for ferrous pipe and fittings, etc.) Failure to provide this information may result in a reduced score for this section.

All of the water used in West Lewiston will be better managed through the system. Total project cost is estimated at $4,026,000. Expected life of the project is estimated to be 50 years. 2,800 acre-feet will be conserved; however, all 18,260 acre-feet will be better managed.

$4,026,000
18,260 ac-ft better managed X 50 Years

The calculation yields a cost of $4.41 for every acre-foot of water.

V.A.2. Evaluation Criteria B: Energy Water Nexus

*Up to **16 points** may be awarded based on the extent to which the project increases the use of renewable energy or otherwise results in increased energy efficiency.*

For projects that include construction or installation of renewable energy components, please respond to Subcriterion No. B.1— Implementing Renewable Energy Projects Related to Water Management and Delivery. If the project does not implement a renewable energy project but will increase energy efficiency, please respond to Subcriterion No. B.2— Increasing Energy Efficiency in Water Management. If the project has separate components that will result in both implementing a renewable energy project and increasing energy efficiency, an applicant may respond to both. However, an applicant may receive no more than 16 points total under both Subcriteria No. B.1 and B.2.

Subcriterion No. B.1. – Implementing Renewable Energy Projects Related to Water Management and Delivery

*Up to **16 points** may be awarded for projects that include construction or installation of renewable energy components (i.e., hydroelectric units, solar-electric facilities, wind energy systems, or facilities that otherwise enable the use of renewable energy). Projects such as small-scale solar resulting in minimal energy savings or production will be considered under Subcriterion No. 2 below.*

(1) Energy Capacity

Describe the amount of energy capacity. *For projects that implement renewable energy systems, state the estimated amount of capacity (in kilowatts) of the system. Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate.*

Turbine and Generator Efficiency = 0.75
Change in Elevation = 238 ft
Size of Pipe = 36 inch
Roughness, e = 0.0000233 ft PVC
v = 1.70E-05 ft^2/s
Re=VD/v
Swamee-Jain Equation

$$f = \frac{1.325}{\left[\ln\left(\frac{e}{3.7D} + \frac{5.74}{\mathrm{Re}^{0.9}}\right)\right]^2}$$

$$H = \Delta z - \left(\frac{fpLp}{Dp} + Kp\right)\left(\frac{Vp^2}{2g}\right) - \left(\frac{ftLt}{Dt} + Kt\right)\left(\frac{Vt^2}{2g}\right)$$

$$hp = \frac{\gamma Q H \eta_t}{550}$$

$$MW = 0.745\left[kW/hp\right]\left(\frac{hp}{1000}\right)$$

The 36-inch pipe will carry up to 38.23 cfs, which is Cub River's full water right, at 5.4 ft/s. If 38.23 cfs was put through the turbines at the hydropower facility being proposed, the maximum energy capacity is 456 kilowatts.

Flow (cfs)	V_p	V_t	Re_p	Re_t	f_p*	f_t*	$H_{turbine}$	hp	MW
38.23	5.408	5.408	9.56E+05	9.56E+05	1.19E-02	1.19E-02	188.0	611.8	0.456

(2) Energy Generated

Describe the amount of energy generated. *For projects that implement renewable energy systems, state the estimated amount of energy that the system will generate (in kilowatt hours per year). Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate.*

The equations are the same as above. The changes are as follows:

- Through the irrigation season the change in head on the turbines will be 111 ft instead of 238 ft. The difference provides increased pressures to the water users downstream so pumping is not required.
- The Cub River water rights are for only 38.36 cfs during the irrigation season and 12 cfs is allowed during the winter. The current demand on the system is 25 cfs during the irrigation season.

Flow (cfs)	V_p	V_t	Re_p	Re_t	f_p^*	f_t^*	$H_{turbine}$	hp	MW	kWh in one year
12	1.698	1.698	3.00E+05	3.00E+05	1.45E-02	1.45E-02	232.0	237.0	0.177	640558
38.23	5.408	5.408	9.56E+05	9.56E+05	1.19E-02	1.19E-02	188.0	611.8	0.456	328470
25	3.537	3.537	6.25E+05	6.25E+05	1.27E-02	1.27E-02	88.1	187.6	0.140	617608
13.23	1.872	1.872	3.31E+05	3.31E+05	1.42E-02	1.42E-02	230.9	260.0	0.194	856242
									Total	2442879

The actual anticipated energy generation will be approximately 2,000,000 kWh to 2,500,000 kWh. At $0.05 per kWh, the annual energy production will exceed $100,000. This will help offset the costs of pumping at the Bear River that currently cost the Cub River Irrigation Company over $200,000.

(3) Other Renewable Energy Benefits

Describe any other benefits of the renewable energy project. *Please describe and provide sufficient detail on any additional benefits expected to result from the renewable energy project, including:*

- *Expected environmental benefits of the renewable energy system*
- *Any expected reduction in the use of energy currently supplied through a Reclamation project*
- *Anticipated beneficiaries, other than the applicant, of the renewable energy system*
- *Expected water needs of the renewable energy system*

By producing energy at this site, it will alleviate energy needed to be supplied to this area. This will especially help offset the power needed to pump water from the Bear River.

AND/OR

Subcriterion No. B.2 – Increasing Energy Efficiency in Water Management

If the project is not implementing a renewable energy component, as described in Subcriterion No. B.1 above, up to ***4 points*** *may be awarded for projects that address energy demands by retrofitting equipment to increase energy efficiency and/or through water conservation improvements that result in reduced pumping or diversions.*

(1) Energy Efficiencies

Describe any energy efficiencies that are expected to result from implementation of the water conservation or water management project *(e.g., reduced pumping).*

- *Please provide sufficient detail supporting the calculation of any energy savings expected to result from water conservation improvements. If quantifiable energy savings are expected to result from water conservation improvements, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year.*

- *Please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements?*
- *Please indicate whether your energy savings estimates originates from the point of diversion, or whether the estimate is based upon an alternate site of origin.*
- *Does the calculation include the energy required to treat the water?*
- *Will the project result in reduced vehicle miles driven, in turn reducing carbon emissions? Please provide supporting details and calculations.*

As previously stated, the Hatch Pump station at the lower end of the Middle Ditch System injects 20 cfs into the system during most of the irrigation season. The Haworth Pump station injects 10 cfs into the system. The demand of the system is 45 cfs. The 25 cfs coming from the Middle Ditch will all be used instead of 10 cfs of it being lost to seepage and evaporation. As a result, pumping will be reduced to 7 to 10 cfs at the Hatch Pump station and the Haworth Pump station will be eliminated. The pressures in the system will also be increased by the piped Middle Ditch.

The power to pump 20 cfs at 55 psi is equal 380 kW. The power to pump 7 cfs at the pressures needed is 99 kW. At $0.54 per kWh for a 140-day irrigation season that equates to a savings of **approximately $33,500 per year**. The energy efficiencies expected from this project are significant.

(2) Minimal Energy Savings/Production

Describe any renewable energy components that will result in minimal energy savings/production *(e.g., installing small-scale solar as part of a SCADA system).*

N/A

V.A.3. Evaluation Criteria C: Benefits to Endangered Species

*Up to **12 points** may be awarded for projects that will benefit federally-recognized candidate species or up to **12 points** may be awarded for projects expected to accelerate the recovery of threatened species or engendered species, or addressing designated critical habitat.*

Projects that benefit both federally-recognized candidate species and federally-listed threatened or endangered species or designated critical habitat will receive additional consideration under this criterion. Please see <www.fws.gov/endangered/index.html> for a complete listing of federally-recognized candidate species and federally-listed threatened or endangered species in your area.

Benefit to Federally-Recognized Candidate Species

For projects that will directly benefit federally-recognized candidate species, please include the following elements:

(1) What is the relationship of the species to water supply

The Bear River system drains to the Great Salt Lake. Prior to entering the Great Salt Lake, diversions are made to a migratory bird refuge operated by the U.S. Fish and Wildlife Service. Historically, the refuge has had some difficulty in diverting the necessary water supply to maintain a healthy ecosystem, sometimes resulting in outbreaks of disease. By conserving 3,000 acre-feet and leaving the water in the Bear River, additional supplies would be available to those species that rely on the bird refuge. There are 2 species of birds that are listed as federally recognized candidate species; Yellow-billed Cuckoo, and the Greater sage-grouse.

(2) What is the extent to which the proposed project would reduce the likelihood of listing or would otherwise improve the status of the species

The increased water supply would directly lead to an improved habitat for the candidate species and reduce the likelihood of disease at the bird refuge.

Accelerated Recovery of Federally-Recognized Species

For projects that will directly accelerate the recovery of threatened species or endangered species or address designated critical habitats, please include the following elements:

(1) How is the species adversely affected by a Reclamation project?

(2) Is the species subject to a recovery plan or conservation plan under the Endangered Species Act?

(3) What is the extent to which the proposed project would reduce the likelihood of listing or would otherwise improve the status of the species

The Arctic Peregrine Falcon is listed as a "Recovery" species. Although, a specific recovery plan is not listed, the description of the benefits to the Bear River Migratory Bird Refuge will aid in the recovery of the Arctic Peregrine Falcon as well.

V.A.4. Evaluation Criteria D: Water Marketing

Up to 12 points may be awarded for projects that propose water marketing elements, with maximum points for projects that establish a new water market. Note: Water marketing does not include an entity selling conserved water to an existing customer. This criterion is intended for the situation where an entity that is conserving water uses water marketing to make the conserved water available to meet other existing water supply needs or uses.

Briefly describe any water marketing elements included in the proposed project. *Include the following elements:*

(1) Estimated Amount of Water to be Marketed

N/A

(2) Method of Water Marketing
A detailed description of the mechanism through which water will be marketed (e.g., individual sale, contribution to an existing market, the creation of a new water market, or construction of a recharge facility.

N/A

(3) Number of Users, Types of Water Use, etc. in the Water Market

N/A

(4) Water Marketing Legal Issues
A description of any legal issues pertaining to water marketing (e.g., restrictions under Reclamation law or contracts, individual project authorities, or State water laws)

N/A

(5) Estimated Duration of the Water Market

N/A

V.A.5. Evaluation Criteria E: Other Contributions to Water Supply Sustainability

Up to 14 points may be awarded for projects expected to contribute to a more sustainable water supply. This criterion is intended to provide an opportunity for the applicant to explain how the project relates to a WaterSMART Basin Study, how the project could expedite future on-farm improvements, or how the project will provide other benefits to water supply sustainability within the basin. An applicant may receive the maximum 14 points under this criterion based on discussion of one or more of the numbered sections below.

This criterion is intended to provide an opportunity for the applicant to explain any additional benefits of the proposed project within the water basin, including benefits to downstream water users or to the environment. Please provide sufficient explanation of the expected benefits and their significance, including any information about water supply conditions within the basin (e.g., is the river, aquifer or other source of supply over-allocated? Is there frequently tension or litigation over water in the basin? Are there endangered species within the basin or other factors that may lead to heightened competition for available water supplies among multiple water uses?) Is the possibility of future water conservation improvements by other water users enhanced by completion of this project?) Additional project benefits may include, but are not limited to, the following:

(1) Points may be awarded for projects that address an adaptation strategy identified in a WaterSMART Basin Study.

Proposals that thoroughly discuss how a project is addressing an adaptation strategy identified in a Basin Study (i.e., a strategy to mitigate the impacts of water shortages resulting from climate change, drought, increased demands, or other causes) may receive maximum points under this criterion. Applicants should provide as much detail as possible about the relationship of the proposed project to the adaptation strategy identified in the Basin Study, including, but not limited to, the following:

- *Describe in detail the adaptation strategy that will be implemented through this WaterSMART Grant project. Identify the specific WaterSMART Basin Study where this adaptation strategy was developed. Describe the water supply or water management issue that this adaptation strategy will address.*
- *Provide a detailed explanation of how the proposed WaterSMART Grant project would help implement the adaptation strategy identified in the Basin Study.*
- *Fully describe any other benefits to water supply sustainability that are not described elsewhere in your proposal that will result from this WaterSMART Grant project, for example, if the project will result in further collaboration among Basin Study partners, or demonstrate a new or innovative approach, among other benefits.*

Through the WaterSMART Basin Study Program, Reclamation is working with State and local partners, as well as other stakeholders, to comprehensively evaluate the ability to meeting future water demands within a river basin. The Basin Studies allow Reclamation and its partners to evaluate potential impacts of climate change to water resources within a particular river basin, and to identify adaptation strategies to address those impacts. For more information on Basin Studies, please visit: <www.usbr.gov/WaterSMART/bsp>.

This Project does not fall within one of the areas that have completed Basin Studies. It is an important river basin that is included in both the Utah and Idaho State Water Plans. The basin is the Bear River Basin.

(2) Points may be awarded for projects that will help to expedite future on-farm irrigation improvements, including future on farm improvements that may be eligible for NRCS funding. Please address the following:

- *Include a detailed listing of the fields and acreage that may be improved in the future.*

- *Describe in detail the on-farm improvements that can be made as a result of this project. Include discussion of any planned or ongoing efforts by farmers/ranchers that receive water from the applicant.*
- *Provide a detailed explanation of how the proposed WaterSMART Grant project would help to expedite such on-farm efficiency improvements.*
- *Fully describe the on-farm water conservation or water use efficiency benefits that would result from the enabled on-farm component of this project. Estimate the potential on-farm water savings that could result in acre-feet per year. Include support or backup documentation for any calculations or assumptions.*
- *Projects that include significant on-farm irrigation improvements should demonstrate the eligibility, commitment, and number or percentage of shareholders who plan to participate in any available NRCS funding programs. Applicants should provide letters of intent from farmers/ranchers in the affected project areas.*
- *Describe the extent to which this project complements an existing or newly awarded AWEP project.*

Note: On-farm water conservation improvements that complement the water delivery improvement projects selected through this FOA may be considered for NRCS funding and technical assistance in FY 2013 to the extent such assistance is available. Complementing NRCS Farm Bill programs include the Environmental Quality Incentive Program (EQIP) and Agricultural Water Enhancement Program (AWEP), which are the primary programs that address water quantity and water quality conservation practices. For more information, including application deadlines and a description of available funding, please contact your local NRCS office or visit <www.nrcs.usda.gov>for further contact information in your area.

By boosting the pressures in the Middle Ditch system, it is anticipated that additional landowners will convert from flood irrigation to the more efficient sprinkle irrigation. This will also increase water savings. Although many in the area have already converted, more on farm improvements will occur after the project has been fully implemented.

(3) Points may be awarded for projects that include other benefits to water supply sustainability.

Projects that do not address a need/adaptation strategy identified in a Basin Study or do not help expedite future on-farm irrigation improvements, may receive maximum points under this criterion by thoroughly explaining additional project benefits. Please provide sufficient explanation of the additional expected project benefits and their significance. Additional project benefits may include, but are not limited to, the following: Will the project make water available to address a specific concern? For example:

- *Will the project address water supply shortages due to climate variability and/or heightened competition for finite water supplies (e.g. population growth or drought)? Is the river, aquifer or other source of supply over-allocated?*
- *Will the project market water to other users? If so, what is the significance of this (e.g., does this help stretch water supplies in a water-short basin)?*
- *Will the project make additional water available for Indian tribes?*
- *Will the project help to address an issue that could potentially result in an interruption to the water supply if unresolved? (e.g., will the project benefit endangered species to maintain an adequate water supply)? Are there endangered species within the basin or other factors that may lead to heightened competition for available water supplies among multiple water uses?*
- *Will the project generally make more water available in the water basin where the proposed work is located?*

The Bear River Basin covers three states, Utah, Wyoming, and Idaho. Within these three states, there are countless irrigation companies, municipalities, and individual users all vying for the same water. Any water conservation measures will improve relations within the basin. As described above, this project will increase the water supply available within the basin by 2,800 acre-feet, thereby helping with operational conditions at the Bear River Migratory Bird Refuge.

(4) Does the Project Promote and Encourage Collaboration Among Parties?

- *Is there widespread support for the project?*

- *What is the significance of the collaboration/support?*
- *Will the project help to prevent a water-related crisis or conflict?*
- *Is there frequently tension or litigation over water in the basin?*
- *Is the possibility of future water conservation improvements by other water users enhanced by completion of this project?*

Historically, separate factions within Cub River Irrigation Company have been at odds over water supply and water delivery within the system. Attempts have been made over the past decade to alleviate some of those issues and concerns. Luckily, the water has been available due to the 20,000 acre-foot contract from Bear Lake. However, as the resources of the Bear River Basin are further tapped, the excess water may not be available in the future. All of the shareholders within the company have met and given their support for the project. The completion of the project will bring Cub River Irrigation Company into balance and alleviate some of the current conflicts.

(5) Will the Project Increase Awareness of Water and/or Energy Conservation and Efficiency Efforts?

- *Will the project serve as an example of water and/or energy conservation and efficiency within a community?*
- *Will the project increase the capability of future water conservation or energy efficiency efforts for use by others?*
- *Does the project integrate water and energy components?*

It is a great balance of integrated water conservation and energy conservation. Cub River Irrigation Company is the largest irrigation company in Cache Valley, serving a total of 27,000 acres. Many other irrigation companies will look to Cub River as an example and this should lead to additional projects that mesh both water conservation and energy conservation.

V.A.6. Evaluation Criteria F: Implementation and Results

*Up to **10 points** may be awarded for the following:*

Subcriterion No. F.1 – Project Planning

Points may be awarded for proposals with planning efforts that provide support for the proposed project.

Does the project have a Water Conservation Plan, System Optimization Review (SOR), and/or district or geographic area drought contingency plans in place? Does the project relate/have a nexus to an adaptation strategy developed as part of a WaterSMART Basin Study)? *Please self-certify, or provide copies of these plans where appropriate, to verify that such a plan is in place.*

Provide the following information regarding project planning:

(1) Identify any district-wide, or system-wide, planning that provides support for the proposed project. This could include a Water Conservation Plan, SOR, Basin Study, or other planning efforts done to determine the priority of this project in relation to other potential projects.

This project meets goals in the Idaho State Water Plan.

(2) Identify and describe any engineering or design work performed specifically in support of the proposed project.

A preliminary feasibility has been done by Franson Civil Engineers to be used in the funding acquisition portion of the project. Preliminary pipe size, pipe lengths, estimated costs, water savings, energy savings, etc. have been presented to the shareholders and they have given their approval to move forward.

(3) Describe how the project conforms to and meets the goals of any applicable planning efforts, and identify any aspect of the project that implements a feature of an existing water plan(s).

This project meets goals in the Idaho State Water Plan. The goals that are met are under water conservation, water use efficiency, protect state river system, and the expansion of hydropower capacity and generation to meet the need for affordable and renewable energy resources.

Subcriterion No. F.2 – Readiness to Proceed

Points may be awarded based upon the extent to which the proposed project is capable of proceeding upon entering into a financial assistance agreement.

(1) Describe the implementation plan of the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. (Please note, under no circumstances may an applicant begin any ground-disturbing activities—including grading, clearing, and other preliminary activities—on a project before environmental compliance is complete and Reclamation explicitly authorizes work to proceed).

(2) Please explain any permits that will be required, along with the process for obtaining such permits.

Proposed Project Schedule:

Date	Activity
April 2013	Notice of Award from USBR
May–June 2013	Finalize All Remaining Funding Sources (Local, State of Utah, State of Idaho)
September 2013	Begin Preliminary Design Begin FERC Permitting Conduit Exemption Process
October 2013	Begin Environmental Clearance (It is not expected that there will be any major environmental issues)
February 2014	Complete Environmental Clearance
April 2014	Begin Final Design and Construction Drawing Preparation
August 2014	Complete Design Process with Design Drawings and Specifications Complete FERC Permitting Conduit Exemption Process
September–November 2014	Agency Review and Approval (USBR and Idaho Water Resources)
December 2014	Advertise for Pipeline Bids and Potential Pipe Purchase by Irrigation Company
February 2015	Pipeline Bid Opening
March 2015–July 2015	Pipeline Phase 1 Construction
August 2015	Advertise for Hydropower Facility Bids
October 2015- April 2016	Pipeline Phase 2 Construction; Hydropower Facility Construction
April 2016	Project Complete

The Environmental Clearance and FERC permitting conduit exemption need to be completed before any construction work can begin. The Environmental Clearance is not expected to have any major environmental

issues. Additionally, there were no apparent issues found during preliminary checks of the National Register of Historic Places and the National Wetlands Inventory. It is also expected that FERC will award a conduit exemption for this power project as this project fits the description of a conduit exemption very well. The conduit exemption process will take up to one year, though FERC has been working on streamlining the process.

Subcriterion No. F.3 – Performance Measures

Points may be awarded based on the description and development of performance measures to quantify actual project benefits upon completion of the project.

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved, marketed, or better managed, or energy saved). For more information calculating performance measure, see Section VIII.A.1. "FY2013 WaterSMART Water and Energy Efficiency Grants: Performance Measures."

The Final Report will describe the benefits as they have been implemented and will show the performance measurements as follows:

- Water Saved – This project will be able to show that the Bear River pump station and the Hatch Pump Station will be taking less water out of the Bear River as stated above. The demands will remain the same, but more water will be delivered from the new Middle Ditch Pipe to meet the demands. It will be fairly easy to show less pumping at these stations. The saved water will stay in the Bear River and help with operational conditions at the Bear River Migratory Bird Refuge.
- Hydropower and Water Better Managed – This project will be able to show that the Cub River Irrigation Company water rights will be put to better use, by not only using the water for irrigation, but for power generation. All of the water rights on the Cub River will be put to this use. The documentation of power generation will be easy to put in the final report.
- Energy Saved – Besides the actual hydropower generation itself, this project will save in energy by reducing pumping at the Bear River and at the Hatch pump station. This will be documented in the report.

Please see V.A.1 and V.A.2 for equations for water saving and energy generation.

V.A.7. Evaluation Criteria G: Additional Non-Federal Funding

Up to 4 points may be awarded to proposals that provide non-Federal funding in excess of 50 percent of the project costs. State the percentage of non-Federal funding provided.

$$\frac{\textit{Non-Federal Funding}}{\textit{Total Project Cost}} \qquad \frac{\$2{,}526{,}000}{\$4{,}026{,}000} = 62.74\%$$

V.A.8. Evaluation Criteria H: Connection to Reclamation Project Activities

Up to 4 points may be awarded if the proposed project is in a basin with connections to Reclamation project activities. No points will be awarded for proposals without connection to a Reclamation project or Reclamation activity.

(1) How is the proposed project connected to Reclamation project activities?

N/A

(2) Does the applicant receive Reclamation project water?

N/A

(3) Is the project on Reclamation project lands or involving Reclamation facilities?

N/A

(4) Is the project in the same basin as a Reclamation project or activity?

Although there are no direct ties to a Reclamation Project, there are numerous Reclamation projects within the county and Bear River Basin.

Hyrum Project
Preston Bench Project
Newton Project
West Lewiston Pressurized Irrigation Project
Preston-Whitney Interconnect Project

(5) Will the proposed work contribute water to a basin where a Reclamation project is located?

As described above, 2,800 acre-feet of water will be added to the Bear River Basin.

APPENDIX A

Cub River Irrigation Company

Middle Ditch Canal Pipe

1/15/2013

Engineer's Conceptual Cost Estimate

				Engineers' Estimate	
No.	Item	Unit	Approx. Quantity	Unit Price	Total Price
1	Mobilization	LS	1	$ 60,000.00	$ 60,000.00
2	Construction Surveying	LS	1	$ 15,000.00	$ 15,000.00
3	Site Preparation	LS	1	$ 10,000.00	$ 10,000.00
4	Furnish and Install 36" C905 (80 psi)	LF	19,750	$ 82.00	$ 1,619,500.00
4	Furnish and Install 36" C905 (100 psi)	LF	6,000	$ 100.00	$ 600,000.00
4	Furnish and Install 36" C905 (125 psi)	LF	1,500	$ 125.00	$ 187,500.00
5	Furnish and Install Pipe Fittings	EA	6	$ 3,000.00	$ 18,000.00
6	Furnish and Install Concrete Intake Structure	LS	1	$ 25,000.00	$ 25,000.00
7	Furnish and Install 36" Isolation Valve	EA	4	$ 5,500.00	$ 22,000.00
8	Furnish and Install AirVac Valve Assembly	EA	14	$ 3,500.00	$ 49,000.00
9	Furnish and Install Hydropower Turbines and Generators	LS	1	$ 450,000.00	$ 450,000.00
10	Furnish and Install Hydropower House	LS	1	$ 75,000.00	$ 75,000.00
				Construction Subtotal	$ 3,131,000
				Environmental Compliance (USBR)	$ 43,000
				Environmental Compliance (Engineer)	***$ 20,000***
				FERC Permiting	***$ 60,000***
				Transmission Line Upgrade	$ 300,000
				Engineering Predesign and Design	***$ 251,000***
				Legal and Administrative	***$ 30,000***
				Construction Observation and Reporting	***$ 191,000***
				Total	$ 4,026,000

Italicized bolded items are on the engineering manpower estimate.

ENGINEERING MANPOWER AND COST ESTIMATE

Client: Cub River Irrigation Company
Project: Middle Ditch

Personnel Assigned

1. Principal ($149)
2. Senior Manager ($130)
3. Senior Engineer ($115)
4. Staff Engineer ($101)
5. Senior Field Engineer ($101)
6. Engineer I ($91)
7. Senior Designer ($89)
8. Reports - Writer/Editor ($81)
9. Designer ($80)
10. Engineering Assistant ($77)
11. Engineering Intern ($75)
12. CAD Operator ($72)
13. Technician ($59)
14. Office Assistant ($55)
15. Clerk ($49)

Task Description	Hours By Personnel Category									Total Hours	Total Labor Charges	Other Direct Costs	Total Fee
	1	2	3	4	6	7	9	14	15				
	Principal	Pr. Manager	Sen. Eng.	Staff Eng.	Eng. I	Sen. Des.	Des.	Off. Assist.	Clerk				
Phase 1 - Predesign													
Task 1. Management and Coordination	4	4								8	$1,084	$0	$1,084
Task 2. Client Meetings	10	10				4	4	4		32	$3,578	$0	$3,578
Task 3. Pipeline Predesign				10	5					15	$1,420	$0	$1,420
Task 4. Cost Estimate				5						5	$490	$0	$490
Task 5. Funding Applications	5	5		10						20	$2,335	$0	$2,335
Task 6. Water Rights Research			10							10	$1,120	$0	$1,120
SUBTOTAL	**19**	**19**	**10**	**25**	**5**	**4**	**4**	**4**	**0**	**90**	**$10,027**	**$0**	**$10,027**
Phase 2 - Design													
Task 1. Management and Coordination	50	130		20				10	5	215	$26,360	$0	$26,360
Task 2. Environmental Compliance	5	25	80	25	25	10	10	10		190	$19,655	$0	$19,655
Task 2. FERC Permitting	30	30	100	200	80	80	40	40	40	640	$60,010	$0	$60,010
Task 3. ROW Coordination		25	40	80	80	25	25	15	5	295	$27,645	$0	$27,645
Task 4. Hydraulic Design		20	80	140	80					320	$32,240	$0	$32,240
Task 5. Utility Coordination		10	60	80						150	$15,820	$0	$15,820
Task 5. Power Transmission Line Work	10	30	30	30	30	20	20	25	5	200	$19,015	$0	$19,015
Task 6. Pipeline Design and Selection			30	80	25	5	5			145	$14,220	$0	$14,220
Task 6. Hydropower Design and Selection			40	80	50	20	20			210	$20,000	$0	$20,000
Task 7. Pipeline Drawings and Specifications	5	25	40	80	60	60	60	25	5	360	$32,880	$0	$32,880
Task 7. Hydropower Drawings and Specifications	5	25	40	80	60	60	60	25	5	360	$32,880	$0	$32,880
Task 8. Pipeline Bid and Award		20	20	40				20	5	105	$9,980	$0	$9,980
Task 8. Hydropower Bid and Award		20	20	40				20	5	105	$9,980	$0	$9,980
SUBTOTAL	**105**	**360**	**580**	**975**	**490**	**280**	**240**	**190**	**75**	**3295**	**$320,685**	**$0**	**$320,685**
Phase 3 - Construction Observation													
Task 1. Management and Coordination	80	120								200	$26,720	$0	$26,720
Task 2. On-Site Observation and Documentation	50			1200						1250	$124,850	$0	$124,850
Task 3. Contract Administration				140				20	10	170	$15,260	$0	$15,260
Task 4. Record Drawings					40	80	20	20		160	$13,020	$0	$13,020
Task 5. Project Closeout				20		14	10	10	10	64	$4,954	$0	$4,954
Task 6. Quarterly and Final Reports	10	30	30	30		30		140		270	$21,530	$0	$21,530
Task 7. Legal	10	40	40	30					20	140	$14,870	$0	$14,870
SUBTOTAL	**150**	**190**	**70**	**1420**	**40**	**124**	**30**	**190**	**40**	**2254**	**$221,204**	**$0**	**$221,204**
Project Totals	**274**	**569**	**660**	**2420**	**535**	**408**	**274**	**384**	**115**	**5639**	**$551,916**	**$0**	**$551,916**