Proposal for the

CITY-COUNTY OF BUTTE-SILVER BOW

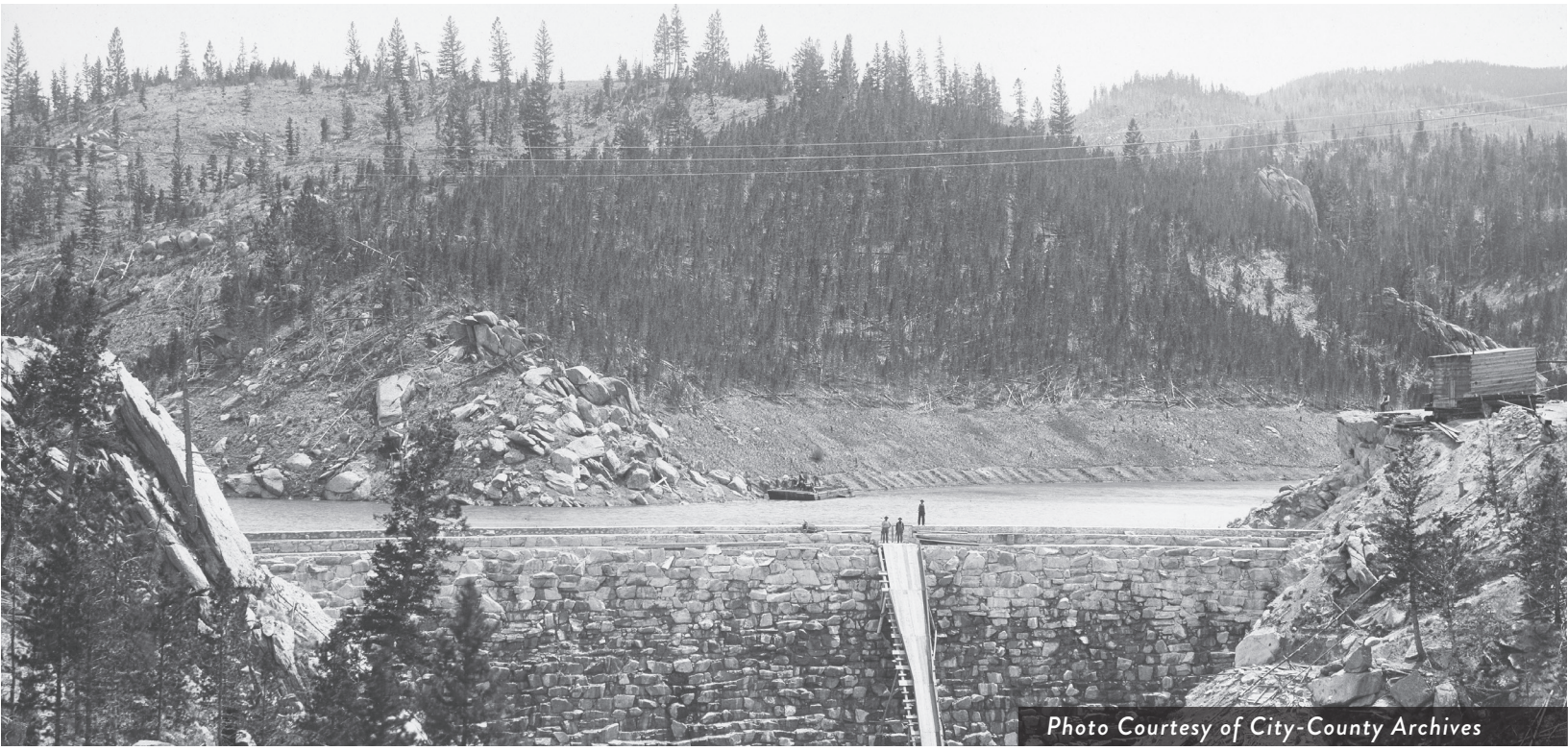

Photo Courtesy of City-County Archives

Basin Creek Dam #1 Rehabilitation

February 25, 2022

GreatWest ENGINEERING

Gannett Fleming

Client Commitment *Empowered Employees* *Quality Solutions*

See what's *possible.*

GreatWest ENGINEERING

February 25, 2022

Jim Keenan
Chief Water Operator
Department of Public Works
126 West Granite Street
Butte, MT 59701

RE: Request for Proposal - Basin Creek Dam #1 Rehabilitation Project

Dear Mr. Keenan:

Great West Engineering is pleased to submit our proposal for the design and construction management of the Basin Creek Dam #1 Rehabilitation Project. Great West has crafted a team of specialists with the experience and qualifications to provide a high-quality, cost-efficient design for this project. We have also included the firm of Gannett Fleming on our team to provide specialized geotechnical and structural engineering services.

The Project Team is uniquely qualified to design the rehabilitation of the dam. Both Great West and Gannett Fleming have completed past work on Basin Creek Dam #1 and are intimately familiar with the deficiencies and proposed recommendations. Gannett Fleming is one of the leading National firms in dam rehabilitation utilizing post-tensioned anchors. They will bring that expertise to this project to ensure successful delivery of the post-tensioned anchoring system.

Our Project Manager and Team are committed to providing responsive service from start to finish. You will find Great West Engineering easy to work with and focused on maintaining open lines of communication. Whether it be in person or virtually, our communications will be customized to best serve the preferences of City-County of Butte-Silver Bow and the needs of the project.

We appreciate this opportunity to present our proposal and cost. Don't hesitate to contact me at (406) 495-6193 with any questions or requests for additional information. We are truly excited about the possibility of working for the City-County of Butte-Silver Bow on the rehabilitation of Basin Creek Dam #1.

Sincerely,

Great West Engineering, Inc.

Jeremiah Theys, PE
Project Manager

HELENA
PO Box 4817
2501 Belt View Drive
Helena, MT 59604
Ph: (406) 449-8627
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BILLINGS
6780 Trade Center Avenue
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GREAT FALLS
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Ph: (406) 952-1109

SPOKANE
9221 N Division Street
Suite F
Spokane, WA 99218
Ph: (509) 413-1430

TABLE OF CONTENTS

Great West Principals

William Lloyd, President
Bill has 27 years of transportation engineering experience.
Daniel McCauley, President Emeritus
Dan has 43 years of civil and structural engineering experience.
Robert Church, Vice President
Bob has 33 years of municipal and solid waste engineering experience.
Craig Pozega, Vice President
Craig has 27 years of municipal engineering experience.
Chad Hanson, Vice President
Chad has 24 years of municipal engineering experience.
Denice Street, Secretary/Treasurer
Denice has 27 years of administrative experience.

www.greatwesteng.com

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WHY THE GREAT WEST TEAM

Specializing in: Natural Resources ○ Water ○ Wastewater ○ Planning
Grant Writing and Administration ○ Transportation ○ Solid Waste

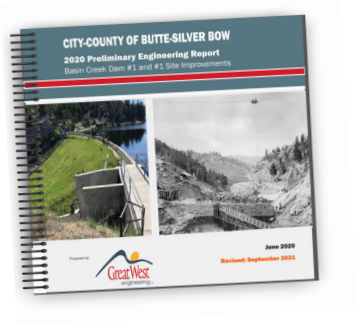
85 Employees

5,000+ Projects since **1984**

5 Offices

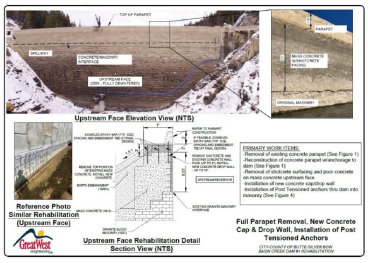
Helena
Billings
Great Falls
Boise
Spokane

We Promise to truly listen to your project goals, be responsive to your needs, and advocate on your behalf.



FAMILIARITY WITH DAM

The Team of Great West Engineering and Gannett Fleming are intimately familiar with the current operations of Basin Creek Dam #1. Having prepared the structural evaluation, Preliminary Engineering Report, and the preparation of MCEP (formerly TSEP) and RRGL grants has given us a thorough understanding of operations and how this dam is integral to the municipal water supply for Butte.



UNDERSTANDING OF THE PROBLEM

Completing analysis of the dam and evaluation of the alternatives for rehabilitation has given our Team in-depth knowledge of the problems facing the dam. This will allow us to hit the ground running on design. We don't need to take a step back and further analyze the system, we are ready to get started on implementing an effective alternative that will ensure the long-term safety and operation of this dam.

DAM EXPERTS

In the past 10 years, our Team has completed inspections, designs, and/or risk assessments for over 800 dams throughout the United States. Many of these projects have included design and installation of post-tensioned anchors varying in design capacity from 422 kips to 2039 kips (12-strand to 58-strand). With the project goal including post-tensioned anchors, our vast knowledge and expertise will allow us to provide the necessary skills to address regulatory concerns, structural analysis, constructability issues, contractor qualifications and construction observation.

COMPANY HIERARCHY

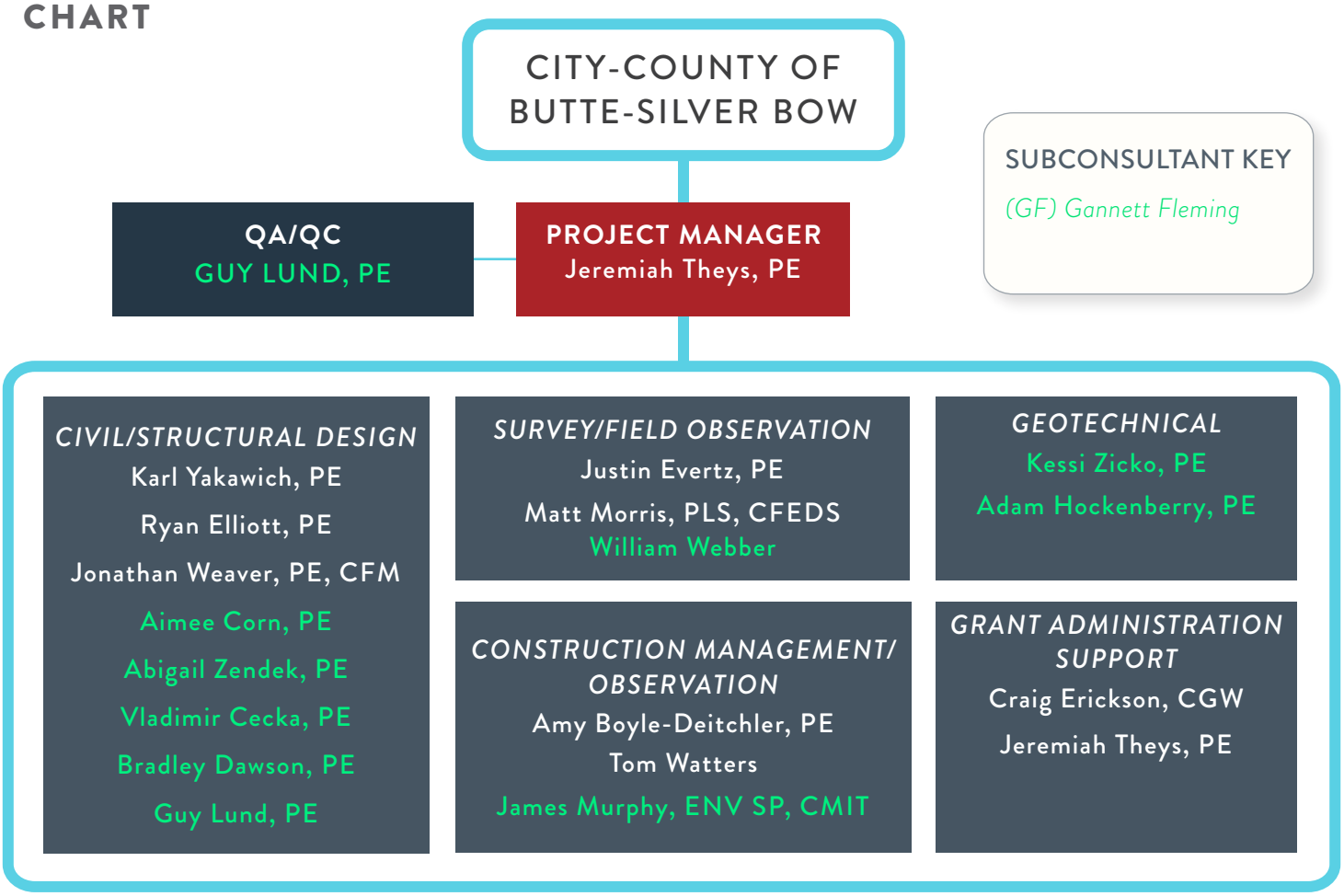
The teamoffers experts in dam rehabilitation projects.

We have assembled a team of specialists that is very familiar with the Basin Creek Dam #1 Rehabilitation Project - our core members either completed the Preliminary Engineering Report or structural analysis on this dam. This experience will allow the team to hit the ground running on the project, saving time and money. We have also included Gannett Fleming as a subconsultant on this project. We anticipate utilizing Gannett Fleming's expertise in the geotechnical and structural engineering of this rehabilitation project.

Our team includes a highly experienced grant specialist who recently assisted BSB in securing $625,000 in grants through the MCEP and RRGL programs. Please refer to the organizational chart below which details our team and their roles. Please refer to our SOQ submitted on December 22nd for specialized experience of the firm and projected team. Detailed subconsultant information including project references can also be found in the recently submitted SOQ.

Our core Team members have either completed the Preliminary Engineering Report or Structural Assessment on the Basin Creek Dam #1.

ORGANIZATIONAL CHART



COMPANY HIERARCHY

Jeremiah Theys, PE	jtheys@greatwesteng.com; (406) 495-6193	*$186/hr*
Karl Yakawich, PE	kyakawich@greatwesteng.com; (406) 495-6182	*$186/hr*
Ryan Elliott, PE	relliott@greatwesteng.com; (406) 495-6168	*$166/hr*
Jonathan Weaver, PE, CFM	jweaver@greatwesteng.com; (406) 495-6171	*$166/hr*
Justin Evertz, PE	jevertz@greatwesteng.com; (406) 495-6173	*$138/hr*
Matt Morris, PLS, CFEDS	mattm@morrislandsurveys.com; (406) 466-3550	*$175/hr*
Amy Boyle-Deitchler, PE	adeitchler@greatwesteng.com; (406) 495-6160	*$176/hr*
Tom Watters	twatters@greatwesteng.com; (406)	*$136/hr*
Craig Erickson, CGW	cerickson@greatwesteng.com; (406) 495-6189	*$158/hr*
Aimee Corn, PE	acorn@gfnet.com; (720) 439-4422	*$150/hr*
Abigail Zendek, PE	azendek@gfnet.com; (717) 886-5251	*$140/hr*
Vladmir Cecka, PE	vcecka@gfnet.com; (717) 585-7667	*$200/hr*
Bradley Dawson, PE	bdawson@gfnet.com; 720-642-9492	*$180/hr*
Guy Lund, PE	glund@gfnet.com; (720) 439-4544	*$290/hr*
William Weber	wwebber@gfnet.com; (720) 370-6816	*$135/hr*
James Murphy ENV SP, CMIT	jpmurphy@gfnet.com; (717) 886-5205	*$120/hr*
Kessi Zicko, PE	kzicko@gfnet.com; (717) 599-2932	*$195/hr*
Adam Hockenberry, PE	eahockenberry@gfnet.com; (717) 480-8256	*$215/hr*

The following section provides our scope of work and schedule to complete the design and construction for the Basin Creek Dam #1 Rehabilitation Project.

PROJECT MANAGEMENT AND COORDINATION

Great West will provide project management services in support of the Basin Creek Dam #1 Rehabilitation Project. Activities associated with managing the project team, including subconsultants, monitoring and mitigating risk, assuring that quality checking activities are being conducted, and monitoring budget and schedule will be performed on a frequent basis. On a monthly basis, Jeremiah will assess the earned value of the work performed to determine the overall budget and schedule status of the project. As the work progresses, Jeremiah will closely monitor critical path activities and regularly report out the status to the team.

Quality, scope, budget, and schedule are critically linked throughout a successful project. Delivery of a quality project on budget and schedule requires careful planning and intensive on-going management throughout the implementation of the project.

KICKOFF WORK SESSION

The Project Team of Great West and Gannett Fleming proposes to initiate work on this project with a kickoff work session at which we will confirm the project goals and objectives to ensure the project will meet Butte Silver Bow's (BSB) expectations, improve efficiency, reduce costs, and prevent project delays. All interested stakeholders, as requested by BSB, will be invited to the work session. We anticipate up to four people from the Project Team will attend in-person. For the most informative kickoff work session, we propose meeting in a conference room followed by a visit to the project site. Communication and listening are key to successful implementation of all projects and this work session will give us the opportunity to set up an appropriate project management and communication plan.

COMMUNICATION

Critical project tasks include communication and active listening. Great West will add value to this project through frequent and meaningful communication, by being responsive, and by proactively looking ahead to build momentum in completing the project. Our communications, whether it be in person or by video conferences, telephone conversations, email, or text messages, will be customized to best serve the preferences of BSB and the needs of the project. The Project Team will participate in monthly virtual progress meetings with BSB to discuss project status, budgets, and other relevant needs for the successful advancement of the project.

DESIGN SERVICES

PRELIMINARY ENGINEERING

The Project Team prepared the 2020 Structural Assessment and the 2021 Preliminary Engineering Report (PER) for this rehabilitation project; therefore, we have a thorough understanding of the project deficiencies and recommended rehabilitation alternative. With this prior knowledge, we will be able to begin advancing the selected alternative immediately upon Notice to Proceed. The recommendations from the PER will be compiled into a technical memorandum that will be submitted to the Montana Department of Natural Resources (DNRC) dam safety division and regional engineer to ensure their concurrence with the project recommendations. The technical memorandum will incorporate the project goals and objectives, including project schedule for concurrence with all stakeholders. This will be the basis for the design and schedule of the project.

GW ENGINEERING

Clear and frequent communication will be key to a successful project.

SURVEY

The Project Team will conduct a topographic and planimetric survey of the site, locating physical features and utilities that may exist throughout the areas in which improvements will be made. The survey will cover the concrete dam crest, spillway, abutments, and downstream embankment and toe area to verify structural components of the dam and potential access and staging locations for construction. Prior to performing the survey, the project team will consider possible barge access locations for further assessment. Other site features of particular interest include drainpipes, outlet pipes, vaults, outlet valves, the bubbler system, and miscellaneous appurtenances at this water supply dam. We understand that a bathymetric survey of the reservoir was completed recently, and we will utilize that data to the extent possible to complement the land survey. In addition, an aerial drone will be utilized during the survey phase to provide high quality imagery for design/layout purposes and to complement the contract drawings.

GEOTECHNICAL ANALYSIS

Geotechnical analyses will consist of the development of engineering parameters for anchor capacity calculations. At a minimum, engineering parameters of materials located within the bond zone will be required. Our conceptual evaluation determined that anchor capacity can be achieved within the "granite blocks and concrete" dam section. Extending the anchors into foundation bedrock is not anticipated.

We anticipate completing geotechnical analyses using readily available historical and published data. Therefore, our team's first step will be to conduct a detailed review to evaluate construction techniques used in the dam construction and the available historical sampling and testing data. Previous investigations are understood to include physical observations and coring and testing of the existing mass concrete stair-stepped overlay. Available concrete testing data are understood to include petrographic, compressive strength, and ASR susceptibility. The historical data will be complemented with published data along with data developed from dams of similar construction techniques and engineering judgment. Engineering properties developed to design anchor capacity will be confirmed during the construction activities.

Post Tensioned Anchor (PTA) installation requires drilling of the dam, including establishment of a pilot hole to maintain alignment. Collecting samples for laboratory testing (unit weight and unconfined compressive strength) is recommended to confirm engineering parameters within the bond zone. Our Project Team has extensive experience working with PTA specialty contractors and has utilized this technique with success on prior projects. This approach provides cost savings to BSB since access to the dam and an available work platform for pre-construction sampling of bond zone materials is limited, requiring temporary improvements. Construction of temporary access platforms is feasible and more economical when included as part of the construction process for anchor installation.

▲ Post-Tensioned Anchor

Although sampling of anchor bond zone material is not included in the design effort, our Project Team has developed relationships with geotechnical sampling contractors throughout the United States, several of which we maintain 'open-end' type contracts for rapid deployment. Should sampling be required during design, our Project Team can quickly add this service.

STRUCTURAL DESIGN

The purpose of the structural remediation is to remove the deteriorated concrete and replace it with a reinforced concrete overlay, thereby extending the design life of the dam. In addition, post-tensioned anchors will be installed to stabilize the top mass concrete section for the flood overtopping condition.

Structural remediation will remove deteriorated concrete and replace with reinforced concrete overlay.

▲ Barge Work For Dam Face Improvements

It is the team's understanding that the reinforced concrete overlay will extend from the upstream face, along the crest, and down the downstream face of the mass concrete. The intent of the overlay is to protect and prevent additional deterioration of the mass concrete portion of the dam. The team will evaluate the concrete mix design and the size and spacing of reinforcement to current American Concrete Institute (ACI) standards. Additionally, the team will determine the necessary anchorage required to support the overlay to the existing dam. The team will design water stops to prevent seepage through the overlay to the mass concrete, thereby reducing both uplift and additional freeze-thaw damage. Furthermore, the upstream concrete overlay will extend above the crest elevation, replacing the existing parapet.

The purpose of the post-tensioned anchors (PTA) is to stabilize the upper mass concrete against sliding and overturning during the PMF event which overtops the dam. This will be accomplished by anchoring the upper mass concrete to the original masonry dam. To ensure that the PTAs are economically feasible, the team will design the post-tensioned anchors by optimizing the anchor spacing, orientation, and length. The PTAs will be designed in accordance with Recommendations for Prestressed Rock and Soil Anchors published by the Post-Tensioning Institute and U.S. Army Corps of Engineering (USACE) Guidelines.

Structural evaluations will be performed to adequately develop this design. Our Project Team was involved in the feasibility study performed in 2020 which included structural stability calculations for the top mass concrete section. As part of this effort, these structural stability calculations will be refined to include the weight of the concrete overlay and incorporate the loads provided by the post-tensioned anchors. In addition, calculations will be provided to support the design of the overlay. This includes evaluating the new parapet wall to withstand the loading from the probable maximum flood (PMF).

Constructability concerns will be considered throughout the design process. A primary factor in constructability is access for installation of the PTAs construction of the overlay. Access onto the dam crest is limited from the abutments due to the steep slopes and stairs, so barge work is anticipated; and the dam crest itself is narrow requiring modification to accommodate construction equipment.

DESIGN REPORT

The Project Team will prepare the design report providing, at a minimum, the requirements outlined in the Design Review Process Manual for Dam Projects by DNRC. The reports will be submitted at the 60%, 90%, and 100% design stages, with each subsequent report addressing prior comments from BSB and DNRC. The design report will document the design process including the design criteria, development of engineering parameters, geotechnical and geologic conditions, seismic site conditions, engineering analyses, and potential benefits and risks associated with postponing the boring program until the construction phase. In addition, the design report will address construction considerations and recommendations, site access, post-tensioned anchor materials including corrosion protection, and the cost estimate.

We will provide frequent communication
with project stakeholders.

PLANS AND SPECIFICATIONS

The Project Team will prepare design drawings and technical specifications in accordance with standard procedures and in conformance with applicable state and federal requirements, including those set forth by DNRC and the funding agencies utilized to finance the project. These plans and specifications will outline the work to be conducted by the contractor, along with the legal responsibilities of all parties. Key components of these documents include work restrictions based on input from BSB and DNRC, land and barge access, contractor laydown and staging areas, post-tensioned anchor details and construction steps, and concrete placement with reinforcement and water stops. In addition, the plans and specifications will address impacts of the anchors and concrete overlay to the gantry crane, bubbler system, vaults, mechanical and electrical systems, hand rails, and other appurtenances, although no significant changes are anticipated.

We will submit to BSB, DNRC, and the funding agencies a copy of the 60% plans and specifications for review. Based upon any comments received, we will make the necessary modifications to the plans and specifications and work with appropriate officials, as necessary, to obtain approvals and/or permits for the plans and specifications. The plans and specifications will be submitted for review at the 90% design stage for final concurrence.

The plans and specifications will be incorporated into a construction bid package. This bid package will include drawings and details, the aforementioned technical specifications, general conditions, applicable funding agency special conditions, wage rates, and bid documents. The 100% level plans and specifications will be submitted to BSB for the bid stage.

BIDDING PROCEDURES

Once the plans and specifications are approved by the appropriate officials, the Project Team will provide the necessary assistance in order that bids may be received and construction contracts awarded. Working with dam owners, our team frequently recommends pre-qualification of anchor contractors to help ensure they have the experience, personnel, and equipment necessary to install the anchors at complex sites such as Basin Creek Dam #1. For dam safety and personnel safety during construction, anchor contractors must be familiar with site restrictions posed by working on a reservoir and with the quality control requirements necessary for installation and stressing of post-tensioned anchors in an existing dam. Pre-qualification provides an opportunity for interested contractors to visit the site and become familiar with not only the design considerations, but also site access, work platform, and constraints. Representatives from BSB, Great West, and Gannett Fleming are expected to attend the pre-qualification site visit to provide an overview of the construction project and answer contractor questions.

ASSISTANCE IN BIDDING PROCEDURES

The Project Team will prepare the bid advertisement and assist BSB in advertising for and obtaining competitive bids. We will also prepare and distribute sufficient copies of plans and specifications to qualified bidders and arrange and attend a pre-bid conference to answer specific questions that potential bidders may have about the project. Representatives from BSB, Great West, and Gannett Fleming are anticipated to attend the pre-bid conference and site visit to provide an overview of the construction project and answer contractor questions. We will arrange and attend the bid opening, review and tabulate all bids, and make a recommendation to BSB for the selection of a contractor.

Bidding procedures will be coordinated with the grant agencies and will satisfy all funding agency requirements.

PREPARE AGREEMENTS

Upon award of the bids, the Project Team will prepare the necessary Notice of Award, Agreement, and Notice to Proceed forms for use in awarding the contract.

Award and agreement will be closely coordinated with BSB and funding agencies.

Specialized construction management services will be provided to ensure work is completed as intended.

PERMIT ISSUANCE

The Project Team understands the complexity and impacts associated with cultural resources and environmental conditions at a project site. Throughout the design phase, we will use our experience with federal and state agencies to advance the project to completion. Our Project Team will conduct the necessary asbestos and cultural resource (historic) investigations early in the design process to ensure environmental compliance is accounted for in the design. Additionally, potential impacts of the permits on the design and schedule will be monitored and conveyed to BSB. As required by DNRC, regulatory permits expected to be required will be outlined in the 60% Design Report along with the agencies and responsible parties. Prior to bidding, all environmental considerations and permit requirements will be addressed in the design approach.

The Draft (60%) and Final (90%) Design Report, plans and specifications, and necessary construction documents will be transmitted to the Montana Dam Safety Program (MTDSP) along with a completed Construction Permit Application. Any requested changes from MTDSP will be addressed prior to advertising the construction project for bid.

CONSTRUCTION SERVICES

CONSTRUCTION ADMINISTRATION

Once the construction contract has been awarded, the Project Team will provide the engineering and construction management necessary to ensure that all work conforms to the plans, specifications, and local, state, and federal requirements. These services will include:

Project Coordination

Throughout construction, the Project Team will coordinate among BSB, contractor(s), and funding agencies. Weekly meetings will be scheduled with the contractor(s), engineer, and BSB officials to discuss project status. As required, status reports will be provided.

Pre-construction Conference

The Project Team will hold a pre-construction conference at the site with the selected contractor, owner, and local and state officials to discuss all appropriate details concerning construction of the improvements. In addition, we will coordinate with the grant agencies to ensure that all funding agency requirements such as labor standards are addressed and made clear to the contractor.

Staking

The Project Team will provide necessary control staking, including profiles, benchmarks, and other pertinent information in order that the contractor can construct the project and our on-site representative can check and approve the work.

Shop Drawings and Submittal Reviews

The Project Team will review shop drawings and submittals provided by the contractor to ensure that all materials, systems, and components meet or exceed the specifications. In addition, we will respond timely to any requests for information (RFI) from the contractor to help advance the construction without delays.

We are experts at providing grant administration services and will be available for guidance or to assist as needed.

Payment Requests

The Project Team will review each monthly payment request submitted by the contractor. Upon our approval of each request, we will work with BSB and submit to the funding agencies for a drawdown of funds, if necessary. In addition, we will prepare and process change orders as required.

CONSTRUCTION OBSERVATION

Our Project Team will provide full-time, on-site observation for the duration of the construction period. The design team will also make periodic on-site visits to review work progress. The Project Team assumed a construction duration of 100 working days for estimating purposes. The Project Team's on-site representative will observe the contractor's operations to help confirm compliance with the plans and specifications. Our on-site representative will keep daily logs of all work performed and provide BSB with weekly progress reports.

Upon completion of all work, we will conduct a final inspection of the project. Upon approval of all work, we will write a letter of acceptance to BSB and assist with processing final payments.

We will also prepare the record drawings and submit them to BSB and DNRC for final approval. Included with the submittal will be a letter from our firm certifying that the project was constructed in accordance with approved plans and specifications. A set of reproducible record drawings, along with a CADD e-transmittal, will be provided to BSB upon final completion and approval of the project.

GRANT ADMINISTRATION ASSISTANCE

Our team will be available to assist as needed in the administration of the Montana Coal Endowment Program (MCEP) and DNRC Renewal Resource Grant and Loan (RRGL) funds that we assisted BSB in securing; in addition to other potential grants used for implementation of this project. Grant administration services are not included in our fee estimate but could be added upon request. Services we provide typically include:

- Assistance in meeting MCEP and RRGL start-up conditions which involve preparing the signature and deposit forms, project schedule, management plan, and other items identified in the project management manuals.
- Assisting BSB with establishing and maintaining complete and accurate project files.
- Preparing documents, manuals, forms, and reports required for administration of the grant programs.
- Reviewing proposed project expenditures to ensure their propriety and proper allocation to the project's budget.
- Assuring compliance with applicable civil rights requirements, including preparation of an equal opportunity plan.
- Monitoring construction process for labor standards and project expenditures. Review federal and state labor standard reports submitted by the Contractor and Subcontractors. Submit documentation of reviews and comments to BSB, MCEP, and RRGL.
- Assist BSB with coordinating MCEP monitoring visits, preparing performance reports, and project closeout documents. Preparing reimbursement draw requests and assist the BSB financial department with submitting the reimbursements to the grant agencies.

SCOPE OF WORK/SCHEDULE

Project Schedule

The following pages provide our detailed cost estimate for each design level including our grand total cost.

Cost Proposal

Phase		Cost
1. Draft Design Phase	$	318,037
2. Final Design Phase	$	229,429
3. Bid Documents/Permit Issuance	$	48,005
4. Construction Administration & Oversight	$	348,713
TOTAL SCOPE FEE:	**$**	**944,183**

Cost Proposal

Project: Basin Creek Dam #1 Rehabilitation Project
Phase: 1. Draft Design Phase

Great West Engineering Staff | Gannett Fleming Staff

Task	Rate:	Principal $ 200.55	Project Manager $ 195.30	Structural Engineer $ 195.30	Sr. Civil Engineer $ 174.30	Sr. Project Engineer $ 161.70	Jr. Project Engineer $ 139.65	Surveyor $ 157.50	Project Coordinator $ 100.80	QA/QC & Civil/Structural Design $290.00	Sr. Geotechnical $215.00	Sr. Civil/Structural Design $200.00	Mid. Geotechnical $195.00	Mid. Civil/Structural Design $180.00	Jr. Civil/Structural Design $150.00	Jr. Geotechnical/ Structural Design $140.00	Totals
Project Administration																	
Contracting		2.0	8.0		4.0				5.0								24.0
Project Coordination & Management		4.0	36.0	4.0	12.0	4.0									16.0		76.0
Project Management Plan			2.0		3.0										2.0		7.0
Communication Plan			2.0		3.0										2.0		7.0
QA/QC Plan			2.0		3.0										2.0		7.0
Progress Reports (Monthly with Invoices)			2.0		12.0				4.0								22.0
Total Hours		6.0	52.0	4.0	37.0	4.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0	0.0	22.0	0.0	143.0
Total Labor Cost		$1,203	$10,156	$781	$6,449	$647	$0	$0	$907	$0	$0	$0	$0	$0	$3,300	$0	$23,443
Draft Design Phase																	
Site Survey																	
Engineering Surveying w/Drone Imagery (includes review of available survey data)			4.0				40.0	40.0									84.0
Data Processing/Data Consolidation (Includes Past Surveys, including Bathymetric & Drone)			2.0			2.0	2.0	12.0									18.0
Site Basemapping			2.0			2.0	12.0	2.0									18.0
Utility Coordination			1.0				4.0										5.0
Aerial Mapping			1.0				10.0										11.0
Geotechnical Analysis																	
Data review, data gaps identification			4.0		6.0						8.00	6.00	16.00	4.00	20.00	24.00	88.0
Geotechnical Site Characterization & Subsurface Profile											8.00		8.00		4.00	16.00	36.0
Concrete/Masonry/ Foundation Parameter Development													8.00	8.00	16.00	12.00	44.0
Civil/Structural Design																	
Preliminary Structural Analyses										16.0				40.0	100.0		156.0
Preliminary Anchor Design										2.0	2.0	8.0	40.0	4.0	8.0	24.0	88.0
Preliminary Overlay Design										2.0		16.0		2.0	40.0	80.0	140.0
Plans/Specifications/Estimate																	
Outline Specifications and Project Description			2.0	4.0	4.0	4.0	20.0				8.0	4.0	16.0	4.0	4.0		70.0
Preliminary Design Report			6.0	4.0	2.0	2.0	24.0			8.0	24.0	8.0	40.0	20.0	40.0	24.0	202.0
Preliminary Vicinity Map/Cover Sheet							2.0										2.0
Preliminary Quantities			2.0	2.0	2.0		10.0										16.0
Preliminary Construction Estimate			2.0	2.0	2.0		10.0				12.0	8.0	16.0	16.0	40.0	40.0	148.0
Preliminary Plans Package (Drawings)			8.0	8.0	16.0	24.0	240.0				24.0	8.0	24.0	8.0	8.0	24.0	392.0
QA/QC		8.0	8.0	4.0	4.0					16.0	16.0						56.0
Submit Preliminary Design Documents			2.0			2.0	4.0										8.0
Meetings																	
Design Kickoff Work Session (assumed in-person), memo			8.0		8.0								24.0		16.0		56.0
Intermediate Design Meeting (assumed virtual), memo			4.0		4.0								4.0	4.0	4.0		20.0
60% Review Meeting (assumed in-person), memo			8.0		8.0								24.0		16.0		56.0
Misc. Monthly Meetings (Virtual- excluding meetings above, Assumed 3)			6.0		6.0										6.0		18.0
Total Hours		8.0	70.0	24.0	62.0	36.0	378.0	54.0	0.0	44.0	102.0	58.0	220.0	110.0	322.0	244.0	1732.0
Total Labor Cost		$1,604	$13,671	$4,687	$10,807	$5,821	$52,788	$8,505	$0	$12,760	$21,930	$11,600	$42,900	$19,800	$48,300	$34,160	$289,333
Total Project Hours		14.0	122.0	28.0	99.0	40.0	378.0	54.0	9.0	44.0	102.0	58.0	220.0	110.0	344.0	244.0	1875.0
Total Project Labor Costs		$2,808	$23,827	$5,468	$17,256	$6,468	$52,788	$8,505	$907	$12,760	$21,930	$11,600	$42,900	$19,800	$51,600	$34,160	$312,777
																Total Direct Labor:	**$312,777**

Reimbursable Expenses (Indirect Costs)	GWE	GF			
Mileage	750	1400	@	$ 0.65	$1,397.50
Airfare		$2,400.00			$2,400.00
Per Diem (Lunch)	7	10	@	$ 15.00	$255.00
Per Diem (Full Day)		8	@	$ 54.00	$432.00
Lodging (Nights)			@	$ 125.00	$0.00
GPS Rental (Daily)	2		@	$ 250.00	$500.00
Drone (Daily)	1		@	$ 125.00	$125.00
Misc., Production, Tools, Etc.					$150.00

Estimated Total Probable Cost **$318,037**

Cost Proposal

Project: Basin Creek Dam #1 Rehabilitation Project
Phase: 2. Final Design Phase

Great West Engineering Staff | Gannett Fleming Staff

Task	Rate:	Principal $ 200.55	Project Manager $ 195.30	Structural Engineer $ 195.30	Civil Engineer $ 174.30	Project Engineer $ 161.70	Project Engineer $ 139.65	Construction Manager $ 184.80	QA/QC & Civil/Structural Design $290.00	Sr. Geotechnical $215.00	Sr. Civil/Structural Design $200.00	Mid. Geotechnical $195.00	Mid. Civil/Structural Design $180.00	Jr. Civil/Structural Design $150.00	Jr. Geotechnical/ Structural Design $140.00	Totals
Final Design Phase																
Civil/Structural Design																
Final Stability Calculations									8.0				20.0	40.0		68.0
Final Anchor Design									2.0	8.0	8.0	24.0	4.0	4.0	16.0	66.0
Final Overlay Design									4.0	8.0	16.0	24.0	4.0	4.0	32.0	92.0
Plans/Specifications/Estimate																
Finalize Design Report		1.0	4.0	4.0	4.0	4.0	32.0		8.0	8.0	8.0	32.0	16.0	32.0	32.0	185.0
Final Plan Package		1.0	12.0	6.0	24.0	24.0	240.0				16.0	16.0	8.0	8.0	16.0	371.0
Final Quantities			2.0	1.0	1.0	1.0	16.0									21.0
Final Specification Package/Project Manual		2.0	4.0	4.0	4.0		30.0	2.0	4.0	8.0	40.0	60.0	8.0	60.0	120.0	346.0
Construction Cost Estimate			2.0	1.0	1.0	1.0	8.0	1.0				16.0			8.0	38.0
Construction Schedule			1.0				2.0	1.0								4.0
QA/QC		8.0	8.0	8.0	4.0			2.0								30.0
Submit Final Design Documents			1.0			2.0	4.0									7.0
Constructability Review										24.0		4.0		4.0		32.0
Meetings																
Intermediate Design Meeting (assumed virtual), memo			3.0		3.0							3.0		3.0		12.0
90% Review Meeting (assumed in-person), memo			8.0		8.0							24.0		16.0		56.0
Final Design Meeting (assumed virtual), memo			3.0		3.0							3.0		3.0		12.0
Monthly Meetings (Virtual- excluding meetings above, Assumed 3)			6.0		6.0									6.0		18.0
Total Hours		12.0	54.0	24.0	58.0	32.0	332.0	6.0	26.0	56.0	88.0	206.0	60.0	180.0	224.0	1358.0
Total Labor Cost		$2,407	$10,546	$4,687	$10,109	$5,174	$46,364	$1,109	$7,540	$12,040	$17,600	$40,170	$10,800	$27,000	$31,360	$226,906
Total Project Hours		12.0	54.0	24.0	58.0	32.0	332.0	6.0	26.0	56.0	88.0	206.0	60.0	180.0	224.0	1358.0
Total Project Labor Costs		$2,407	$10,546	$4,687	$10,109	$5,174	$46,364	$1,109	$7,540	$12,040	$17,600	$40,170	$10,800	$27,000	$31,360	$226,906
															Total Direct Labor	**$226,906**

Reimbursable Expenses (Indirect Costs)	GWE	GF			
Mileage	150	700	@	$ 0.65	$552.50
Airfare		$1,200.00			$1,200.00
Per Diem		5	@	$ 54.00	$270.00
Lodging (Nights)		4	@	$ 125.00	$500.00
Misc., Production, Etc.					$0.00

Estimated Total Probable Cost **$229,429**

Cost Proposal

Project: Basin Creek Dam #1 Rehabilitation Project
Phase: 3. Bid Documents/Permit Issuance

Great West Engineering Staff | Gannett Fleming Staff

Task	Rate:	Principal $ 200.55	Project Manager $ 195.30	Structural Engineer $ 195.30	Civil Engineer $ 174.30	Project Engineer $ 161.70	Project Engineer $ 139.65	Grant Administrator $ 142.80	Project Coordinator $ 100.80	Clerical Support $ 74.55	QA/QC & Civil/Structural Design $290.00	Sr. Geotechnical $215.00	Sr. Civil/Structural Design $200.00	Mid. Geotechnical $195.00	Mid. Civil/Structural Design $180.00	Jr. Civil/Structural Design $150.00	Jr. Geotechnical/ Structural Design $140.00	Totals
Bid Documents																		
Advertisement For Bids					6.0		1.0		4.0	2.0								13.0
Production & Distribution of Documents; Maintaining Official Plan holders List; FTP Internet Preparation & Loading					1.0		2.0		6.0	2.0								11.0
Pre-Bid Conference, Conference Minutes		0.5	8.0		1.0		1.0		1.0					24.00		16.00		51.5
Respond to Bidder Inquiries As Appropriate			2.0		2.0		4.0		1.0			2.0	2.0	4.0	2.0	2.0		21.0
Issue Addenda		0.5	1.0			4.0	8.0		3.0	4.0				4.0	4.0			28.5
Assist Owner in Negotiations With Prospective Contractor's			2.0		3.0		3.0									2.0		10.0
Qualifications of Contractors		0.5	1.0		2.0		4.0							1.0	1.0			9.5
Consult With Owner on Acceptability of Subcontractors, Suppliers, "Or-Equals"			2.0			2.0	2.0					1.0	1.0	1.0	1.0			10.0
Bid Opening, Evaluation of Bids, Certified Bid Tabulation		1.0	8.0				2.0		2.0	1.0				2.0		2.0		18.0
Recommendation of Award and Notice of Award		0.5	1.0			1.0	2.0									1.0		5.5
Misc. Coordination, Insurance Review		1.0	1.0				4.0											6.0
Total Hours		4.0	26.0	0.0	15.0	7.0	33.0	0.0	17.0	9.0	0.0	3.0	3.0	36.0	8.0	23.0	0.0	184.0
Total Labor Cost		$802	$5,078	$0	$2,615	$1,132	$4,608	$0	$1,714	$671	$0	$645	$600	$7,020	$1,440	$3,450	$0	$29,774
Permit Issuance																		
Coordination with Agencies and MTDSP		0.5	2.0		1.0	4.0	4.0							4.0		4.0		19.5
MTDSP Construction Permit Application			1.0		1.0	6.0	6.0											14.0
Asbestos Testing Coordination/Contract		1.0	0.5			4.0												5.5
Cultural Resource Inventory Coordination/Contract		1.0	1.0			4.0												6.0
Final Project Permitting			2.0		1.0	6.0	4.0											13.0
Total Hours		2.5	6.5	0.0	3.0	24.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	4.0	0.0	58.0
Total Labor Cost		$501	$1,269	$0	$523	$3,881	$1,955	$0	$0	$0	$0	$0	$0	$780	$0	$600	$0	$9,510
Total Project Hours		6.5	32.5	0.0	18.0	31.0	47.0	0.0	17.0	9.0	0.0	3.0	3.0	40.0	8.0	27.0	0.0	242.0
Total Project Labor Costs		$1,304	$6,347	$0	$3,137	$5,013	$6,564	$0	$1,714	$671	$0	$645	$600	$7,800	$1,440	$4,050	$0	$39,285
																	Total Direct Labor	**$39,285**

Reimbursable Expenses (Indirect Costs)	GWE	GF			
Mileage	300	700	@	$ 0.65	$650.00
Airfare		$1,200.00			$1,200.00
Per Diem		5	@	$ 54.00	$270.00
Lodging (Nights)		4	@	$ 125.00	$500.00
Cultural Investigation	$5,000.00				$5,000.00
Asbestos Testing	$1,000.00				$1,000.00
Misc., Production, Etc.					$100.00
				Estimated Total Probable Cost	**$48,005**

Cost Proposal

Project: Basin Creek Dam #1 Rehabilitation Project
Phase: 4. Construction Administration & Oversight

Great West Engineering Staff | Gannett Fleming Staff

Task	Principal	Project Manager	Civil Engineer	Project Engineer	Construction Manager	Surveyor	Inspector 1	Project Coordinator	QA/QC & Civil/Structural Design	Sr. Geotechnical	Sr. Civil/Structural Design	Mid. Geotechnical	Mid. Civil/Structural Design	Jr. Civil/Structural Design	Jr. Geotechnical/ Structural Design	Survey/Field Observation	CM/ Observation	Totals
Rate:	$ 200.55	$ 195.30	$ 174.30	$ 139.65	$ 184.80	$ 157.50	$ 135.19	$ 100.80	$290.00	$215.00	$200.00	$195.00	$180.00	$150.00	$140.00	$135.00	$210.00	
Construction Administration																		
General Administration of Construction Contract	4.0	8.0	4.0		80.0			10.0										106.0
Pre-Construction Conference (On-Site, PM, CM & Inspector On-site - 3 hours), notes					7.0		6.0					24.00		16.00				53.0
Schedule Review (Weekly)					14.0						4.00	4.00						22.0
Project Staking (Assumes 2 trips, one initial control verification, one PTA (or as needed), Surveyor only)		1.0	2.0			16.0												19.0
Weekly Progress Meetings (14 weeks), Attendance by CM, (4) attended by PM, Memo		20.0			70.0									50.0				140.0
Misc. Project Changes & Decisions		6.0	2.0		16.0						4.0	8.0	4.0					40.0
RFIs (assume 3)		2.0		2.0	16.0						10.0	20.0	10.0					60.0
Shop Drawings and Submittal Reviews (assume 30 including resubmittals)	1.0	6.0	4.0	16.0	4.0					8.0	20.0	40.0		20.0	40.0			159.0
Applications for Payment/Cert. Payroll Review		2.0		2.0	12.0			12.0										28.0
Substantial Completion/Punch List/Documentation		1.0	2.0		10.0		6.0											19.0
Final Acceptance of the Work		8.0	1.0	2.0	8.0									16.0				35.0
As-Built Survey and Data Processing		1.0		16.0	2.0	16.0	2.0											37.0
As-Built Drawings Developed and Dispersement to Agencies	1.0	2.0	4.0	12.0	4.0		2.0					4.0		4.0				33.0
Warranty Issues		4.0		2.0	10.0			6.0										22.0
Closeout Documentation	1.0	2.0	2.0	2.0	6.0		2.0	2.0										17.0
11 Month Walk Through/Reporting		8.0		2.0	8.0													18.0
Total Hours	7.0	71.0	21.0	56.0	267.0	32.0	18.0		0.0	8.0	38.0	100.0	14.0	106.0	40.0	0.0	0.0	778.0
Total Labor Cost	$1,404	$13,866	$3,660	$7,820	$49,342	$5,040	$2,433		$0	$1,720	$7,600	$19,500	$2,520	$15,900	$5,600	$0	$0	$136,406
Construction Observation																		
Review and Familiarize On-site observation staff with Project Documents		2.0			4.0		8.0					4.0			4.0		8.0	30.0
On-Site Representation (RPR), 100 working days, 6 hours on-site average per day, Includes Reporting Form w/Photos							950.0											950.0
GF assistance during PTA exploration & construction											20.0	40.0	10.0	10.0	112.0		112.0	304.0
Total Hours	0.0	2.0	0.0	0.0	4.0	0.0	958.0		0.0	0.0	20.0	44.0	10.0	10.0	116.0	0.0	120.0	1284.0
Total Labor Cost	$0	$391	$0	$0	$739	$0	$129,510		$0	$0	$4,000	$8,580	$1,800	$1,500	$16,240	$0	$25,200	$187,959
Total Project Hours	7.0	73.0	21.0	56.0	271.0	32.0	976.0		0.0	8.0	58.0	144.0	24.0	116.0	156.0	0.0	120.0	2062.0
Total Project Labor Costs	$1,404	$14,257	$3,660	$7,820	$50,081	$5,040	$131,943		$0	$1,720	$11,600	$28,080	$4,320	$17,400	$21,840	$0	$25,200	$324,365
																	Total Direct Labor	**$324,365**

Reimbursable Expenses (Indirect Costs)	GWE	GF			
Mileage	18150	1900	@	$ 0.65	$13,032.50
Airfare		$3,000.00			$3,000.00
Per Diem (Lunch)	125		@	$ 15.00	$1,875.00
Per Diem (Full Day)		35	@	$ 54.00	$1,890.00
Lodging (Nights)		34	@	$ 125.00	$4,250.00
Misc., Production, Survey, Tools, Etc.					$300.00

Estimated Total Probable Cost **$348,712.50**

Structural

Natural Resources

Transportation

Bridges

Grant Services

Water/Wastewater

Planning

Solid Waste

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