STATE OF COLORADO

Colorado Water Conservation Board
Department of Natural Resources
1313 Sherman Street, Room 721
Denver, Colorado 80203
Phone: (303) 866-3441
FAX: (303) 866-4474
www.cwcb.state.co.us

December 18, 2007

Kevin McBride
District Engineer, Upper Yampa Water Conservancy District
3310 Clearwater Trail
Steamboat Spring, CO 80488

RE: Notice to Proceed—Morrison Creek Reservoir Feasibility Study

Dear Kevin:

This letter is to inform you that the purchase order for your grant request of $49,500 to assist in the funding of the Morrison Creek Reservoir Feasibility Study has been signed on December 12, 2007. With the executed purchase order, you are now able to proceed with the project and begin invoicing the State of Colorado for costs incurred from December 12, 2007 to project completion. Upon receipt of your invoice(s), the State of Colorado will provide payment no later than 45 days. I wish you much success in your project.

Sincerely,

/s/

Todd Doherty, CWCB
(303) 866-3945

WATER CONSERVATION BOARD
1313 SHERMAN STREET, ROOM 721
DENVER, CO 80203

Buyer: MAGGIE VAN CLEEF
Phone Number: 303-866-4188
Agency Contact: STEVEN SHULL
Phone Number: 303 866 3998

DATE: 12-12-07

IMPORTANT
The PO# and Line # must appear on all invoices, packing slips, cartons and correspondence

ACC: 12-11-07

PURCHASE ORDER
STATE OF COLORADO

P.O. # OE PDA 08000000058 **Page#** 01

State Award #

BID #

FEIN 840776538 **Phone:** 970-879-2424
Vendor Contact:
Purchase Requisition #:

VENDOR
UPPER YAMPA WATER CONSERVANCY DIST

PO BOX 880339
STEAMBOAT SPRINGS CO 80488

Invoice in Triplicate
To: DIVISION OF WATER CONSERVATION
1313 SHERMAN STREET, ROOM 721
DENVER, CO 80203

Payment will be made by this agency

Ship To: DIVISION OF WATER CONSERVATION
1313 SHERMAN STREET, ROOM 721
DENVER, CO 80203

Delivery/Installation Date: 03-31-08
F.O.B. DESTINATION STATE PAYS NO FREIGHT

INSTRUCTIONS TO VENDOR:

1. If for any reason, delivery of this order is delayed beyond the delivery/installation date shown, please notify the agency contact named at the top left. (Right of cancellation is reserved in instances in which timely delivery is not made.)
2. All chemicals, equipment and materials must conform to the standards required by OSHA.
3. NOTE: Additional terms and conditions on reverse side.

SPECIAL INSTRUCTIONS:

GOODS ARE NOT TO BE DELIVERED, OR SERVICES PERFORMED PRIOR TO 07/01/07

LINE ITEM	COMMODITY/ITEM CODE	UNIT OF MEASUREMENT	QUANTITY	UNIT COST	TOTAL ITEM COST
001	91843000000				$49,500.00

WATER SUP RES GRANT-UPPER YAMPA WTR CONS DIST-MORRISON CRK RES FEASIBILITY STUDY PER EXHIBIT A SCOPE OF WORK.

DOCUMENT TOTAL = $49,500.00

THIS PO IS ISSUED IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS
This PO is effective on the date signed by the authorized individual.

FOR THE STATE OF COLORADO

Authorized Signature

12/12/07
Date

DP-01 (R-02/06)

11/7/2007

Scope of Work
Morrison Creek Reservoir Feasibility Study

Background

The Upper Yampa Water Conservancy District (UYWCD) proposes to construct an up to 5,000 ac-ft reservoir on Morrison Creek to provide additional water storage in the basin and a surface water supply to the Morrison Creek Water and Sanitation District. Morrison Creek Water and Sanitation District (MCW&S). The service area is currently served only by wells. The MCW&S would like a surface water source that could be supplied by gravity to its customers. Concept planning shows a potentially suitable dam site below the confluence of Morrison and Silver Creeks that could provide approximately 5,000 acre feet of storage. This is with a water surface at the elevation of the saddle between the Morrison Creek and Little Morrison Creek Drainage where MCW&S serves customers.

Task 1 – Engineering Feasibility Analysis

Purpose/Approach – The purpose of this task is to conduct geologic mapping, geotechnical investigations, hydrologic analyses, feasibility layouts, and construction cost estimates for the proposed damsite.

Task Description – The purpose of this task is to conduct geologic mapping, geotechnical investigations, hydrologic analyses, feasibility layouts, and construction cost estimates for the proposed damsite. URS will conduct the following investigations and analyses related to the feasibility of constructing a RCC dam:

Task 1.1 - Geologic Mapping
Task 1.2 - Geotechnical Field Investigations
Task 1.3.1 - Conceptual Design, Dam
Task 1.3.2 - Conceptual Design, Access Road
Task 1.4 - Engineering Feasibility Report
Task 1.5 - Project Management/QC/QA

- Geologic mapping of the proposed damsite.
- Geotechnical field investigations to evaluate the depth of alluvium in the valley and obtain samples for laboratory testing. Laboratory testing will consist of index property tests to aid in evaluating the material as a potential borrow source as well as identify the potential for liquefaction or settlement.

- Preliminary hydrologic analyses for estimating the Inflow Design Flood (IDF). The IDF will be generally be prepared in accordance with the "Rules and Regulations for Dam Safety and Dam Construction" by the Colorado Department of Natural Resources, Division of Water Resources, Office of the State Engineer dated January 1, 2007 (Rules and Regulations). Preliminary reservoir routing analyses will be completed on one dam layout to evaluate the potential benefit obtained through reservoir routing. Flows for more frequent storm events will be estimated by proportioning the flows previously estimated at Stagecoach Dam.
- Preliminary hydraulic analyses will be completed to size the spillway. Analysis will include estimates of discharge capacities for the spillway and dam crest, tailwater conditions and stilling basin geometry.
- Conceptual layouts and quantities for one dam height. The quantities will be used to aid in developing the construction cost estimate.
- Minimum outlet works sizing will be based on the need to meet the requirements in the Rules and Regulations. Operations and maintenance issues will be considered as part of the overall sizing of the outlet works conduit.
- Plan and profile drawings for two access roads. A single alternative will be prepared for each access road. One road will extend around the north side of the reservoir to the left abutment of the dam where it will cross the dam crest to provide access to the residence beyond the right abutment of the dam. The second road will provide access to the southeast side of the reservoir where a camp/parking area is planned.
- Feasibility level construction cost estimate for the dam and access roads.
- Engineering Feasibility Report

Assumptions – While developing this scope and budget, the following assumptions were made regarding this task:

- Due to recreation in the Yampa River below the damsite, it has been assumed that the hazard classification will be "high" according to the Rules and Regulations.
- Depending on the final dam height selected, the size could either be "large" or "small" according to the Rules and Regulations. For this scope of work, we have assumed that the dam will be required to meet the requirements for a "large" dam.
- No detailed geotechnical or structural analyses are to be completed. Layouts for the alternatives will be based on engineering judgment using the topographic and geologic mapping information.
- The Probable Maximum Precipitation (PMP) from Stagecoach Reservoir will be used to estimate the IDF.
- The District will supply 2-foot topographic mapping and Digital Elevation Models (DEMs) for the damsite and reservoir area, including the proposed access roads. The information will be provided in an electronic format, either AutoCAD or GIS.

Results/Deliverables – An engineering feasibility report will be prepared to document the work completed as part of Task 1. A draft report will be submitted to the district for review prior to issuing the final report. The report will generally include the following:

- Geologic maps, drillings logs, laboratory test results and a general discussion of the geologic and geotechnical conditions.
- Summary of hydrologic inputs for developing IDF.
- Summary of hydraulic analyses associated with spillway design.
- Conceptual design drawings for the dam (plan, profile and section) and the access roads (typical section, plan and profile).

Summary of major quantities used to aid in development of construction cost estimate. The following quantities will be provided as a minimum; RCC, dam foundation excavation, and access road cut/fill.

Task 2 – Water Quality Assessment

Purpose/Approach – Perform a preliminary characterization of the water quality in the Morrison Creek drainage area during high and low flow conditions to evaluate the treatability of the water for drinking water purposes.

Morrison Creek drainage includes a tributary, Muddy Creek that at times contributes considerable turbidity to the drainage. There is a need to evaluate the suspended sediment load and its treatment potential as a potable water supply as well as its impact on reservoir sedimentation.

The Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Commission (WQCC) has several regulations which protect the surface waters of Colorado. These regulations include:

- The Basic Standards and Methodologies for Surface Water (Regulation No. 31, 5 CCR 1002-31). This regulation presents a classification system which establishes beneficial use categories together with basic standards (section 31.11), an antidegradation rule (section 31.8), and numeric tables which define the conditions generally necessary to maintain and attain such beneficial uses. In addition, it establishes procedures for classifying the waters of the state, for assigning water quality standards, and for continued review of the classifications and standards (CDPHE-WQCC, 2007).

- Classifications and Numeric Standards for Upper Colorado River Basin and North Platte River (Planning Region 12) (Regulation No. 33). In general, this regulation establishes classifications and numeric standards for the Colorado River, the Yampa River, and the North Platte River, including all tributaries and standing bodies of water as indicated in section 33.6. The classifications identify the actual beneficial uses of the water. The numeric standards are assigned to determine the allowable concentrations of various parameters.

- Primary Drinking Water Regulations (5 CCR 1003-1). The purpose of the *Colorado Primary Drinking Water Regulations* is to assure the safety of public drinking water supplies, and to enable the State of Colorado to assume responsibility for enforcing the standards established by the federal Safe Drinking Water Act (*Public Law 93-523), as amended.

These regulations will dictate the specific parameters that need to be monitored. Depending upon the type of community to be served (transient/non-transient/community/non-community) these parameters may vary.

- Field Parameters and General Chemistry
- Biological/microbiological
- Volatile organic chemical (VOCs) contaminants (herbicides/pesticides)
- Inorganics

- Radiological
- Metals

Specific data will be collected to support a complete particle size analysis and flocculation study to determine TDS loads and the treatment potential of stored water.

Task Description – URS will conduct the following:

Task 2.1 - Data Collection and Review
Task 2.2 - Coordination with Regulatory Agencies
Task 2.3 - Water Quality Sampling Plan
Task 2.4 - Water Quality Monitoring
Task 2.5 - Water Quality Analysis Coordination
Task 2.6 - Particle Size Analysis and Flocculation
Task 2.7 - Findings Report
Task 2.7 - Project Management/QC/QA

- Data Collection and Review, including existing data available from the USGS for the Yampa River

- Coordination with Regulatory Agencies (CDPHE, Routt County, USFWS)

- Water Quality Sampling Plan –A simple monitoring plan will be developed to support the data collection techniques and methodologies, including a sampling schedule, sampling locations, Quality Assurance and Quality Control (QA/QC) procedures.

- Water Quality Monitoring – Monthly field monitoring and water quality sampling will be conducted from March 2008 through September 2008. Sampling locations will include composite sampling downstream of the confluence of Morrison and Silver Creeks. Specific water quality parameters will also be identified, including samples for QA/QC purposes (duplicates, blanks and splits).

- Water Quality Analysis Coordination – URS will identify a laboratory to analyze the water quality samples and coordinate with the lab on bottle preparation, sampling methodologies, holding times, chain of custody forms, etc.

- Particle Size Analysis and Flocculation Studies – URS will identify the sampling and methodologies needed to perform the particle size analysis and flocculation study.

Assumptions – The assumptions for this task are:

- URS will participate in two sampling events with the remainder being completed by District personnel. Sampling completed by District personnel will follow the procedures outlined in the Water Quality Sampling Plan.

- Sampling Equipment rental and laboratory testing will not exceed $5,000. A complete suite of analyses for a drinking water supply can exceed $3,000 per sample. In order to meet the project budget, a less comprehensive set of tests will be necessary.

Results/Deliverables – The results of this task will be summarized in a letter report containing the sampling and monitoring results, including the approximate flowrates and field and laboratory test results. Due to the limited number of samples, the impacts to water treatment and reservoir sedimentation will be general in nature with recommendations for future sampling to confirm key project issues.

Task 3 – Water Availability Assessment

Purpose/Approach –
The purpose of this task is to estimate the water available to the proposed Morrison Creek Reservoir on a daily or weekly basis. Since there is no site specific gage data available for Morrison Creek, two tools will be used to estimate water availability for the Reservoir. First, a correlation relating regionally available stream gage data to Morrison Creek will be developed. Second, the predictions of the correlation will be refined using the WRENSS (Water Resources Evaluation of Nonpoint Silvicultural Sources) Model. The calculated physical water availability will be modified to reflect legal water availability based on a review of local, Senior water rights.

Task Description –
Task 3.1 - Develop Base GIS Map
Task 3.2 -Identify Key Watershed Characteristics
Task 3.3 -Collect Stream Gage Data
Task 3.4 -Vegetation Delineation
Task 3.5 -Collect Local Climatic Data
Task 3.6 -Calculate Wet/Dry Climatic Conditions
Task 3.7 -Run Model for Study Basins
Task 3.8 -Model Validation
Task 3.9 -Calculate Physical Water Availability
Task 3.10 -Calculate Legal Water Availability
Task 3.11 -Summarize Model Results
Task 3.12 -Prepare Summary Report
Task 3.13 -Peer Review Summary Report

- Collection of physical data (USGS streamflow data, State of Colorado streamflow data, NRCS Snotel data, NOAA weather data, RAWS weather data)

- Identify key watershed characteristics using Geographic Information Systems (watershed area, watershed boundaries, key tributaries to the Reservoir site, watershed elevation, vegetated area, etc.)

- Predict streamflow at the proposed Reservoir site based on regionally available stream gage data. The gage data shall be corrected for the Reservoir site based on watershed area and watershed elevation.

- Input site specific physical and watershed data into the WRENSS Model. Run WRENSS Model to estimate physical water availability. Distinguish water availability from Upper Morrison Creek and Silver Creek. Validate Model results based on predicted streamflow calculated from regional stream gages.

- Coordinate with the District's attorneys regarding water rights administration in the Upper Yampa River. Specifically, key Senior water rights, historic water rights calls, and anticipated water diversions will be identified.

- Estimate water availability at the proposed dam site during dry, average, and wet years after correcting for physical and legal water limitations.

Results/Deliverables

The results of the Water Availability Assessment will be summarized in a letter report. The Report will specify the data sources and methodologies used in the Assessment. Moreover, it will summarize water available for storage and release from the Reservoir after accounting for physical and legal limitations.

Task 4 – Preliminary Environmental—Wetland Mapping

Task Description - IME will perform the following specific tasks:

Task 4.1 - Preliminary Field Mapping of Wetland Boundaries - As defined by the mapping and aerial photographs supplied by the District all of the wetland boundaries and a breakdown of different wetland habitat types will be mapped, using our Trimble Model Pro XRS GPS system.

Task 4.2 - Drafting of Wetland Boundary - All of the GPS data files will be incorporated into an AutoCAD base map, on 2-foot contour intervals and aerial photography provided by the District. This information can then be used in either AutoCAD or GIS software to determine potential impacts associated with various dam elevations.

Task 4.3 - Summary Report of Boundary and Regulatory Wetland Types. - A written report will also be prepared containing the documentation on how the map was prepared as well as a breakdown of wetland and water impacts by type. This report will also contain a general function analysis of the wetland that will be affected.

Purpose/Approach - One significant environmental issue for the proposed reservoir will be impacts to wetlands that are found adjacent to Morrison Creek and its tributaries. Jurisdictional wetlands are regulated by both the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency under section 404 of the Clean Water Act. Any impacts to these regulated waters of the United States, in the form of fill in the form of the dam or flooding will trigger a 404-Permit Application. All impacts to jurisdictional wetlands will have to be mitigated and since there is no preliminary wetland mapping which has been conducted for this area, it will be necessary to perform a preliminary wetland delineation to determine how many acres of wetlands will potentially be affected by this project, whether there are suitable opportunities for potential on-site wetland mitigation sites to off-set the wetlands which will be affected by this proposed action or whether off-site mitigation will have to be utilized to off-set the wetland losses which will be incurred as a result of this project. The level of detail proposed in the preliminary wetland mapping is not of sufficient detail to satisfy the standards of the U.S. Army Corps of Engineers for wetland delineations but it will be of sufficient detail to allow for engineering and detailed planning to proceed with a high degree of accuracy.

Task Description - The purpose of this task will be to conduct accurate wetland mapping of the jurisdictional waters of the United States which occur within the boundaries of the proposed reservoir site. This information can be used to calculate impacts to regulated waters of the various dam elevation alternatives that are being considered for this project, determine the potential of on-site mitigation and allow for the calculation of approximate costs associated with wetland permitting, mitigation and project management associated with wetlands.

Assumptions - The primary assumption that will be used for the wetland delineation mapping will be that the wetland boundaries that will be collected by walking the edge of the wetlands will be almost identical to those that will be collected using the formal wetland delineation process. This process well be completed in weeks rather than a 2-3 month time frame that would be required to conduct the formal wetland delineation. Aside from the significant cost savings, the mapping of the preliminary wetland boundaries will generate a map that will be almost identical to the formal mapping but at a significant cost savings and most important, this preliminary wetland map can be generated prior to the on-set of winter snowfall, which will preclude the formal wetland mapping on the site and which will be impossible to complete prior to the on-set of winter snowfall. The preliminary wetland mapping can be completed very quickly and be available over the course of the winter for design purposes, while a formal wetland delineation could not be completed until at least toward the middle of next summer.

Results/Deliverables

The mapped boundaries of all jurisdictional waters of the United States found on this site, will be collected using a Trimble Model Pro XRS global positioning system. This unit collects data at a sub-meter level of accuracy, which has been deemed to be acceptable to the U.S. Army Corps of Engineers for wetland delineation and permitting purposes. All of the GPS files will be downloaded into dxf files and inserted into the 2-foot topographic mapping and detailed aerial photography that the District has prepared. The preliminary wetland map will initially be prepared in AutoCAD formal and can be shared in electronic format will all members of the project team.

All individual wetland polygons will be labeled at the time of field mapping as the type of wetland mapping they correspond to. For example, every wetland will be mapping on the basis of the dominate plants growing on that site. Willow carrs, wetland meadow, sedges and other wetland types will be delineated in the field and when the final report is prepared there will be a breakdown of the different wetland types that will potentially be affected by this action. The breakdown of the different types of jurisdictional waters and wetland types is important since impacts to streams, ponds and other areas of open water must be permitted, but impacts to waters do not require mitigation. Similarly, impacts to different wetland types, which possess different functions and importance values require different levels of potential mitigation. For example an irrigated wet meadow, will trigger mitigation, but typically these wetland types are less important and require a lower wetland mitigation ratio, than do willow carrs and naturally occurring sedge meadow wetlands.

Aside from the electronic mapping, a detailed wetland delineation report will be prepared documenting the acreage of the various types of wetlands and other waters that will be affected by this proposed action. This report will also contain a preliminary wetland functional assessment of the different wetland types found in this area. Once the initial draft report has been completed then this draft report will be submitted to the District for their review prior to issuing the final report.

The costs for these items are detailed in the attached spreadsheet In Summary:

Task 1 and 2 – URS	$35,000.00
Task 3 Resource Engineering Inc.	$ 6,256.00
Task 4 IME	$ 4,000.00
Contingency (additional lab anal. & agency meetings)	$ 4,244.00
Total project	$49,500.00

Schedule – Completed by Dates

Task 1 –	
Task 1.1 - Geologic Mapping	11/30/07
Task 1.2 - Geotechnical Field Investigations	12/30/07
Task 1.3.1 - Conceptual Design, Dam	1/30/08
Task 1.3.2 - Conceptual Design, Access Road	1/30/08
Task 1.4 - Engineering Feasibility Report	2/ 8/08
Task 1.5 - Project Management/QC/QA	2/12/08
Final Report Task 1	February 16, 2008
Task 2 –	
Task 2.1 - Data Collection and Review	12/30/07
Task 2.2 - Coordination with Regulatory Agencies	1/30/08
Task 2.3 - Water Quality Sampling Plan	2/30/08
Task 2.4 - Water Quality Monitoring	3/ 1/08 – 10/30/08
Task 2.5 - Water Quality Analysis Coordination	11/15/08
Task 2.6 - Particle Size Analysis and Flocculation	10/30/08
Task 2.7 - Findings Report	11/15/08
Task 2.7 - Project Management/QC/QA	11/15/08
Final Report Task2	December 12, 2008
Task 3 –	
Task 3.1 - Develop Base GIS Map	12/30/08
Task 3.2 -Identify Key Watershed Characteristics	1/15/08
Task 3.3 -Collect Stream Gage Data	1/15/08
Task 3.4 -Vegetation Delineation	1/15/08
Task 3.5 -Collect Local Climatic Data	1/15/08
Task 3.6 -Calculate Wet/Dry Climatic Conditions	1/15/08
Task 3.7 -Run Model for Study Basins	2/30/08
Task 3.8 -Model Validation	2/30/08
Task 3.9 -Calculate Physical Water Availability	2/30/08
Task 3.10 -Calculate Legal Water Availability	2/30/08
Task 3.11 -Summarize Model Results	3/15/08
Task 3.12 -Prepare Summary Report	3/15/08
Task 3.13 -Peer Review Summary Report	3/30/08
Final Report	February 30, 2008

11/7/2007

Task 4 –	
4.1 - Preliminary Field Mapping	11/30/07
4.2 - Drafting of Wetland Boundary	1/30/08
4.3 - Summary Report	2/30/08
Task 4 Final Report	February 30, 2008

Project: Morrison Creek Feasibility Study
Client: Upper Yampa Conservancy District

TABLE 1 - FEE ESTIMATE

Date: August 23, 2007

Task - Description		Labor	ODC	Total Cost	Estimated Hours										Total Hours	Total Labor Cost	Other Direct Costs			Total ODC with markup
					Senior Principal	Senior Consult Prof.	Prof Eng Scientist II	Senior Project Engineer	Designer	Sr. Staff Eng Scientist	Staff Eng Scientist	Senior Drafter	Sr. Project Assistant	Tech Typist Word Proc.			Commun. Fee	Sub Consultant	Misc. Expenses	
					Toms	Sikora	Baures	Glunz												
					$200	$180	$145	$120	$97	$92	$85	$88	$78	$68			3%			15%
Task 1 - Engineering Feasibility Analyses																				
Task 1.1 - Geologic Mapping		$1,984	$261	$2,245			12					2		1	**15**	**$1,984**	$60		$175	**$261**
Task 1.2 - Geotechnical Field Investigations		$3,162	$5,845	$9,007			2			24		6		2	**34**	**$3,162**	$95	$4,400	$600	**$5,845**
Task 1.3.1 - Conceptual Design, Dam		$5,516	$165	$5,681				12	12	24		8			**56**	**$5,516**	$165			**$165**
Task 1.3.2 - Conceptual Design, Access Road		$2,456	$74	$2,530				8	8	4		4			**24**	**$2,456**	$74			**$74**
Task 1.4 - Engineering Feasibility Report		$2,994	$1,412	$4,406			2	8		16				4	**30**	**$2,994**	$90	$1,000	$150	**$1,412**
Task 1.5 - Project Management/QC/QA		$1,192	$1,358	$2,550	2			4					4		**10**	**$1,192**	$36	$1,000	$150	**$1,358**
Sub Total TASK 1 - Engineering Feasibility Analyses		**$17,304**	**$9,115**	**$26,419**	2	0	16	32	20	68	0	20	4	7	**169**	**$17,304**	$519	$6,400	$1,075	**$9,115**
Task 2 - Water Quality Assessment																				
Task 2.1 - Data Collection and Review		$792	$24	$816				2		6					**8**	**$792**	$24			**$24**
Task 2.2 - Coordination with Regulatory Agencies		$240	$7	$247				2							**2**	**$240**	$7			**$7**
Task 2.3 - Water Quality Sampling Plan		$656	$20	$676				4				2			**6**	**$656**	$20			**$20**
Task 2.4 - Water Quality Monitoring		$2,208	$4,896	$7,104						24					**24**	**$2,208**	$66	$4,000	$200	**$4,896**
Task 2.5 - Water Quality Analysis Coordination		$480	$14	$494				4							**4**	**$480**	$14			**$14**
Task 2.6 - Particle Size Analysis and Flocculation		$480	$14	$494				4							**4**	**$480**	$14			**$14**
Task 2.7 - Findings Report		$968	$87	$1,055				2		6		2			**10**	**$968**	$29		$50	**$87**
Task 2.7 - Project Management/QC/QA		$756	$23	$779		2		2					2		**6**	**$756**	$23			**$23**
Sub Total TASK 2 - Water Quality Assessment		**$6,580**	**$5,085**	**$11,665**	0	2	0	20	0	36	0	4	2	0	**64**	**$6,580**	$197	$4,000	$250	**$5,085**
		$0	**$0**	**$0**	0	0	0	0	0	0	0	0	0	0	**0**	**$0**	$0	$0	$0	**$0**
PROJECT TOTAL		**$23,884**	**$14,200**	**$38,084**	**2**	**2**	**16**	**52**	**20**	**104**	**0**	**24**	**6**	**7**	**233**	**$23,884**	**$717**	**$10,400**	**$1,325**	**$14,200**

Morrison Creek Reservoir Feasibility Study
Water Availability Assessment Scope of Work and Estimate of Fee Task 3

September 18, 2007

Item	Unit	Unit Cost	Total Cost
Watershed Yield Analysis			
Develop Base GIS Map	Hours	$ 86.00	$ 172.00
WS Extraction/Stream Network Analysis	Hours	$ 114.00	$ 342.00
Identify Key Watershed Characteristics	Hours	$ 114.00	$ 456.00
Collect Stream Gage Data	Hours	$ 114.00	$ 342.00
Vegetation Delineation	Hours	$ 114.00	$ 342.00
Collect Local Climatic Data	Hours	$ 114.00	$ 228.00
Calculate Wet/Dry Climatic Conditions	Hours	$ 114.00	$ 228.00
Run Model for Study Basins	Hours	$ 114.00	$ 456.00
Model Validation	Hours	$ 114.00	$ 228.00
Calculate Physical Water Availability	Hours	$ 114.00	$ 1,140.00
Calculate Legal Water Availability	Hours	$ 114.00	$ 684.00
Summarize Model Results	Hours	$ 114.00	$ 456.00
Sub-Total			*$ 5,074.00*
Summary Report			
Prepare Summary Report	Hours	$ 114.00	$ 798.00
Peer Review Summary Report	Hours	$ 128.00	$ 384.00
Sub-Total			*$ 1,182.00*
			$ 6,256.00
Total			$ 6,256.00

11/7/2007

IME Wetland Mapping Cost Task 4

	hours	rate/hr	
Field Mapping W/ GPS unit	42.5	$80.00	$3,400.00
Drafting	10	$50.00	$500.00
Indirect Costs			$100.00
Total Cost			$4,000.00

PAYMENT

Payment will be made based on actual expenditures and invoicing by the water activity sponsor. The request for payment must include a description of the work accomplished by major task, and estimate of the percent completion for individual tasks and the entire water activity in relation to the percentage of budget spent, identification of any major issues and proposed or implemented corrective actions. The last 5 percent of the entire water activity budget will be withheld until final project/water activity documentation is completed.

All products, data and information developed as a result of this grant must be provided to CWCB in hard copy and electronic format as part of the project documentation.