City of Carson City
Agenda Report

Date Submitted: December 4, 2010

Agenda Date Requested: December 16, 2010
Time Requested: 5 minutes

To: Mayor and Supervisors
From: Purchasing and Contracts

Subject Title: Action to Amend Contract No. 0910-203 Engineering Services for the Saw Mill Canyon Pipeline and Water Delivery Project with Black and Veatch to increase the Scope of Work to include submittal of supplemental documentation for the new tank and other flow management improvements to the Environmental Protection Agency and to increase the Contract amount from $186,800.00 to $397,841.00 from the Water Fund Account as provided in FY 2010/2011. *(Sandy Scott-Fisher)*

Staff Summary: If approved, the Scope of Work of this contract will be to provide submittal of supplemental documentation for the new tank and other flow management improvements to the Environmental Protection Agency. This contract for Phase II activities is $211,041.00.

Under the Sawmill Canyon Phase 1 Project, B&V prepared a Submittal to Request Categorical Exclusion (CE) for the design of the replacement pipeline from Sawmill Canyon to Tanks. The initial scope of work that identified the project components states that any additional documentation required would be prepared under a separate project (Refer to Phase 1 Scope of Work, Task 2-Exhibit C).

Type of Action Requested: (check one)

(____) Resolution (____) Ordinance
(_X__) Formal Action/Motion (____) Other (Specify)

Does This Action Require A Business Impact Statement: (___) Yes (_X__) No

Recommended Board Action: I move to Amend Contract No. 0910-203 Engineering Services for the Saw Mill Canyon Pipeline and Water Delivery Project with Black and Veatch to increase the Scope of Work to include submittal of supplemental documentation for the new tank and other flow management improvements to the Environmental Protection Agency and to increase the Contract amount from $186,800.00 to $397,841.00 from the Water Fund Account as provided in FY 2010/2011. *(Sandy Scott-Fisher)*

Explanation for Recommended Board Action: Staff recommends amending contract 0910-203 with Black and Veatch to provide submittal of supplemental documentation for the new tank and other flow management improvements to the Environmental Protection Agency.

Applicable Statute, Code, Policy, Rule or Regulation: NRS 625.530

Fiscal Impact: Increase in the contract amount by $211,041.00

Funding Source: Water Fund Account 520-3505-435-7803 as provided in FY 2010/2011

Prior Board Approval: Original Contract was approved August 5, 2010 in the amount of $616,364.00 Amendment No. 1 was approved August 19, 2010 reducing the contract by $429,564.00

Alternatives: Provide other direction

Supporting Material: Contract Amendment No. 2, Exhibit A, B and C

Prepared By: Sandy Scott-Fisher, Purchasing and Contracts Coordinator

Reviewed By: _____ Date: 12-6-10
(Public Works)

_____ Date: 12/7/10
(City Manager)

_____ Date: 12/6/10
(District Attorney)

_____ Date: 12/7/10
(Finance Director)

Board Action Taken:

Motion: _____ 1) _____ _____ Aye/Nay
2) _____ _____

_____
_____
_____
_____

_____
(Vote Recorded By)

CONTRACT FOR SERVICES OF INDEPENDENT CONTRACTOR
Amendment No. 2
Contract No. 0910-203
Engineering Services for the Saw Mill Canyon Pipeline and Water Delivery Project

THIS AMENDMENT is made and entered into this 16th day of December, 2010, by and between the City and County of Carson City, a political subdivision of the State of Nevada, hereinafter referred to as the **"CITY"**, and Black and Veatch Corporation, hereinafter referred to as the **"CONSULTANT"**, and is made to amend the existing contract known as **CONTRACT # 0910-203**.

W I T N E S S E T H :

WHEREAS, the **CITY** desires to amend Section 4 **SCOPE OF WORK** and Section 5 **CONSIDERATION** of the original contract to include that which is contained herein; and

WHEREAS, it is deemed that said amendment is both necessary and in the best interests of the **CITY**.

NOW, THEREFORE, in consideration of the aforesaid premises, the parties agree as follow:

WHEREAS, this Amendment shall not become effective until and unless approved by the Carson City Board of Supervisors.

1. Amend Paragraph 4.1 **SCOPE OF WORK** of **CONTRACT 0910-203** to provide in its entirety as follows:

CONTRACTOR shall provide and perform the following services as set forth in the ***Revised*** **Exhibit A** to Contract Amendment No. 1 and **Exhibit B** and **Exhibit C** to Contract Amendment No. 2 for **CONTRACT 0910-203** attached hereto and incorporated herein by reference for and on behalf of the **CITY** herein referenced as **"Services."**

2. Amend Paragraph 5.1 **CONSIDERATION** of **CONTRACT 0910-203** to provide in its entirety as follows:

CITY agrees to pay **CONSULTANT** the **CONTRACT SUM** based upon time and materials for a not to exceed amount of Three Hundred Ninety-Seven Thousand, Eight Hundred Forty-One Dollars and No Cents ($397,841.00) for Phase 1 and 2, which is an increase to Contract Amendment No. 1 amount of Two Hundred Eleven Thousand, Forty-One Dollars and No Cents ($211,041.00).

CONTRACT FOR SERVICES OF INDEPENDENT CONTRACTOR
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IT IS ALSO AGREED, that all unaffected conditions, requirements, and restrictions of the Original Contract document remain in full force and effect for the duration of the Contract term.

CONTRACT FOR SERVICES OF INDEPENDENT CONTRACTOR
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Engineering Services for the Saw Mill Canyon Pipeline and Water Delivery Project

ACKNOWLEDGMENT AND EXECUTION:

In witness whereof, the parties hereto have caused this Amendment to be signed and intend to be legally bound thereby.

CARSON CITY
Purchasing and Contracts Department
Sandy Scott-Fisher, Purchasing and Contracts Coordinator
201 North Carson Street Suite 3
Carson City, Nevada 89701
Telephone: 775-283-7137
Fax: 775-887-2107
SScott@carson.org

By: _____
Sandy Scott-Fisher

DATED 12/6/10.

CITY'S LEGAL COUNSEL
Neil A. Rombardo, District Attorney

I have reviewed this Contract and approve as to its legal form.

By: _____
Deputy District Attorney

DATED 12/6/10.

CITY'S ORIGINATING DEPARTMENT
BY: Andrew Burnham, Director
Carson City Public Works Department
3505 Butti Way
Carson City, NV 89701
Telephone: 775-887-2355
Fax: 775-887-2112
ABurnham@carson.org

By: _____

DATED 12-6-10

CONTRACT FOR SERVICES OF INDEPENDENT CONTRACTOR
Amendment No. 2
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Engineering Services for the Saw Mill Canyon Pipeline and Water Delivery Project

David Carlson, P.E. deposes and says: That he is the **CONTRACTOR** or authorized agent of the **CONTRACTOR;** that he has read the foregoing Amendment; and that he understands the terms, conditions, and requirements thereof.

CONTRACTOR
BY: David Carlson, P.E.
TITLE: Vice President
FIRM: Black and Veatch Corporation
CARSON CITY BUSINESS LICENSE #: 10-024336
Address: 503 North Division Street
City: Carson City **State:** Nevada **Zip Code:** 89703
Telephone: 775-720-0410 / **Fax #:** 775-293-0494
E-mail Address: rackleyis@bv.com

_____
(Signature of **CONTRACTOR**)

DATED _____.

STATE OF _____)
) **ss**
County of _____)

Signed and sworn (or affirmed) before me on this _____day of _____ , 2010, by _____ .

_____
(Signature of Notary)

(Notary Stamp)

CONTRACT FOR SERVICES OF INDEPENDENT CONTRACTOR
Amendment No. 2
Contract No. 0910-203
Engineering Services for the Saw Mill Canyon Pipeline and Water Delivery Project

CONTRACT ACCEPTANCE AND EXECUTION:

The Board of Supervisors for Carson City, Nevada at their publicly noticed meeting of December 16, 2010, approved Amendment No. 2 for **CONTRACT No. 0910-203 Engineering Service for the Saw Mill Canyon Pipeline and Water Delivery Project**. Further, the Board of Supervisors authorizes the Mayor of Carson City, Nevada to set his hand to this document and record his signature for the execution of this contract in accordance with the action taken.

CARSON CITY, NEVADA

_____
ROBERT L. CROWELL, MAYOR

DATED this 16th day of December, 2010.

ATTEST:

_____
ALAN GLOVER, CLERK-RECORDER

DATED this 16th day of December, 2010.

EXHIBIT A

GRANT APPLICATION PACKAGE

FOR

SAW MILL CANYON PIPELINE AND WATER DELIVERY PLANNING

Submitted by:
Carson City Department of Public Works
3505 Butti Way
Carson City, NV 89701

Submitted to:
Grants Management Office (MTS-7)
Management and Technical Services Division
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105-3901

June 2010

Introduction

Carson City (City) is taking a proactive approach to ensure a sustainable and reliable water supply for its customers. The proposed Marlette-Hobart System Improvements Project (Project) between the State of Nevada (State) and the City seeks to maximize delivery and hydraulic capacity of the State's raw water sources in the Marlette-Hobart conveyance system, Franktown Creek and the East Slope system (collectively referred as the State System) to the City's supply system as well as the Storey County water system.

Background

Carson City has a current population of approximately 57,000 people and a controlled growth plan that sets a cap on annual growth at a maximum of 3 percent per year and a maximum population of 80,000 people. Over the last two years, Carson City has completed a Water Supply Master Plan that identifies the needed water supply and water treatment and transmission facilities to meet its build out population. While the Cities growth has tapered off during the last several years, the City's supplies have experienced impacts due to new water quality regulations and the existing facilities have not been upgraded to meet new system demands. In particular, the City's distribution system experiences storage and pressure issues at several locations, particularly during high demand periods.

Water quality monitoring results indicate that several wells in the City's potable water system have arsenic and uranium concentrations that exceed the current United States Environmental Protection Agency (USEPA) maximum contaminant level (MCL) of 10 µg/L for arsenic and 30 µg/L for uranium. Arsenic impacted wells include Wells 4, 7, 11, 24, 45, 47, 49, 53, and 54. The City is has completed the constructing an arsenic treatment facility. However, this new facility will only treat groundwater produced by Wells 4 and 49.

Uranium impacted wells include Wells 5, 6, 7, 10B, 34, 46, 51, and 55. The Water Supply Master Plan has identified the high quality raw water from the MHWS as the primary source of water to provide blending of the Uranium impacted wells to bring them into compliance with the regulatory standards.

The Eagle Valley Basin, the largest hydrographic resource area for the City, has experienced a decline in well yields and drier than normal climate has limited available surface water resources and reduced groundwater recharge. This situation has apparent impacts to the overall production of water available from the City's existing water rights granted by the State's Engineer Office.

Currently, through efficiently and conjunctively operating its existing water resources and facilities, the City's Department of Public Works has been able to manage these challenges and continue providing adequate water quality and quantity to its population. However, it is clear that this situation is not sustainable and that the City will not be able to reliably provide adequate drinking water service unless the water from the MHWS can be made into a reliable source of water for the City.

Through implementation of the development of additional ground water wells in adjacent hydrographic resource areas and the development of an inter-county water system, the City has a firm water supply for a population of approximately 65,000 people. The development

of additional water supplies from the (MHWS) has been identified as the primary source of water for the City to meet its build out population limit of 80,000 people.

The MHWS is an existing State owned and operated system that has provided water supplies to Carson City and Storey County in Nevada since the Virginia City area was a booming Gold and Silver mining town. This system was specially constructed in the 1860s to provide needed water supply to Virginia City and surrounding mining communities. Over the years, the system was augmented to provide water deliveries to Carson City. Today, this system is the sole source of water for the Story County water system and also provides Carson City with a significant portion of its present day water supply.

The Marlette-Hobart System or State System consists of the Marlette Lake, Hobart Lake, and associated network of piping and pump stations to convey water to the City and Storey County. The project area is shown in Figure 1. The pipeline designated for replacement was severely damaged by heavy equipment using the roadway that the pipeline occupies to access and fight a recent major forest fire.

Water from Marlette Lake (approximate EL 7838) is pumped to the Hobart Creek/Hobart Lake drainage area via a 12 inch pipeline (Refer to EPA Project No. XP-97966501). Water from Hobart Reservoir (El 7650) discharges into Franktown creek and is conveyed to the Red House Diversion Structure. The Red House Diversion structure diverts water from the East Slope watershed (conveyed by the East Slope Collection Pipeline) and Franktown Creek into an 18 inch pipeline which conveys this water to a 22,000 gallon capacity steel storage tank at the Tanks (approximate EL 7000)[1]. The Tanks provides water to Storey County via a 10 inch pipeline and to Carson City's Quill Water Treatment Plant (WTP) via a 10 inch steel pipeline. Water received at the Quill WTP is treated and sent to the City's distribution system.

The City's Quill WTP currently receives water from three sources: Ash Canyon, King Canyon, and State System. The existing rated capacity of Quill is approximately 4 MGD (2,800 gpm) with an ultimate build out capacity of 9.2 MGD (6,400 gpm). Currently, The State System does not have the capacity to deliver this quantity of water to the Quill WTP.

Preliminary hydraulic yield analysis indicates that the State System may be able to yield approximately 8,000 gpm with frequent yields in excess of 9,000 gpm. These levels of flow generally occur during the spring runoff period on all of the tributaries included in this analysis. In the future, it is envisioned that once necessary improvements are made to the MHWS the operation of the Quill WTP will take water from the State System first and that Ash and Kings Canyons will provide the secondary, supplemental supply to allow the Quill WTP to operate at or near full capacity. This will also allow flows from the Ash and Kings Canyon to recharge the ground water basin.

[1] The 24 inch pipeline reduces to an 18 inch steel pipeline approximately 2000 feet below the Red House Diversion Structure.

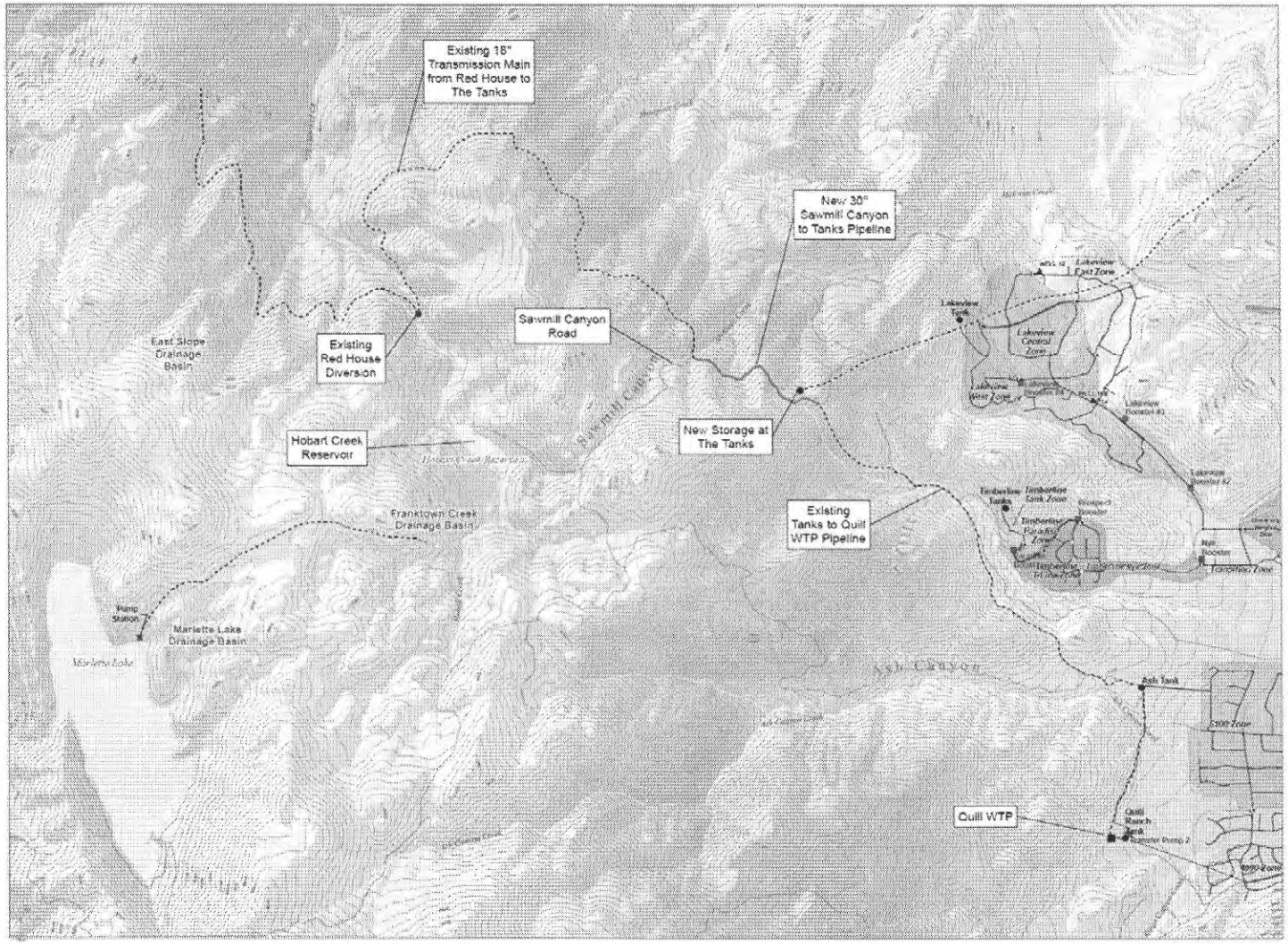


Figure 1: Marlette Hobart Water System Overview

PROJECTS GOALS/OBJECTIVES

The goal of this project is to enhance reliability and provide a sustainable water supply for the City and Storey County. The work proposed in this Work Plan is critical in maintaining the water supply for the City and Storey County since the State System is a key source of water available to meet its supply needs. Additional benefits and outcomes of the Project include:

- Maintain a high quality water supply for the City and Storey County
- Provide reliable and sustainable water supply for the City to meet water demands under build out conditions.
- Increase water supply for blending to lower uranium levels in the City's water supply
- Optimize hydraulic performance of the conveyance, storage, and distribution facilities

The City has identified raw water supplies to accommodate a population of approximately 65,000 people without an expansion of the State System. The City would increase the size of the replacement pipeline to provide the additional supply for the build-out population of 80,000 people and to accommodate the use of MHWS water supply for groundwater recharge. This additional water supply represents less than a thirty percent increase in water supply and population increase.

The City has already completed a preliminary study and identified the necessary improvements for the overall Project. Several projects (e.g. pipeline replacements, water treatment plant expansion, pump station upgrade, etc.) have been identified and prioritized in the City's implementation plan over a total of 8 phases. The proposed Work Plan detailed below contains some of the projects identified in overall Project implementation plan. The Work Plan is segregated into the following phases:

Phase 1

1. Prepare a submittal for a request for a Categorical Exclusion (CE) for the design of the replacement pipeline from Saw Mill Canyon to the Tanks. This will also include preparing a letter report of the species review that will be used for recommendations to the appropriate Federal, State and crosscutter agencies.
2. Evaluate Tanks Meter House flow meter and control valve operation and recommend improvements to pass the future flows of the Marlette-Hobart water delivery system.
3. Assess condition and provide recommendations to replace existing outlet control valves on the Marlette Lake Dam and Hobart Reservoir Dam.
4. Investigate feasibility and prepare preliminary planning for installation of flashboards at Marlette Lake for seasonal storage augmentation.

Tasks 3 and 4 above will include meetings with the State Engineer to determine the requirements for replacing the outlet valves in Marlette Lake Dam and Hobart Reservoir Dam and the placement of seasonal flashboards for supplemental storage in Marlette Lake.

Based on the decisions made as a result of the work tasks in Phase 1, Phase 2 will be completed through the issuance of additional Task Orders specifying the Scope of Work, Budget and Schedule for each individual task. The identified Task Orders will include, but not be limited to, the following tasks:

Phase 2

1. If the assessment of species and CE submittal under Phase 1 results in an EID or EA being necessary, the SOW, Budget and Schedule will be adjusted to reflect the recommended action.

   If work done under the CE submittal is approved by EPA, then the SOW, Budget and Schedule for the completion of design documents will be prepared for the Saw Mill Canyon Pipeline. This may or may not include supplemental storage at The Tanks to provide the current operations with additional capacity to avoid occasional spills.

2. The Tank Meter House flow meter and control valve assessment under Phase 1 will recommend improvements to the existing system which will be included in the Saw Mill Canyon Pipeline design.

3. Based on the recommendations from the outlet valves evaluation and discussion with State Engineer in Phase 1, the SOW, Budget and Schedule for the Marlette for replacement of the outlet valves will be prepared to complete the work.

4. Based on the discussions with the State Engineer concerning the installation of the seasonal flashboards for supplemental storage in Marlette Lake the Scope of Work, Budget and Schedule for completion of a Marlette Lake Water Management Plan will be submitted for review and approval. This document will be used for submittal to agencies and groups that have administrative and/or regulatory authorities for Marlette Lake.

   If the State Engineer recommendations indicate that installing flashboards is not feasible, then the Water Management Plan will not be pursued.

5. Depending on availability of funds, additional planning and preliminary work on the Marlette-Hobart water delivery system will be completed through approved Task Orders.

The total budget for Phase 1 above is $186,800.

The remaining tasks will be completed as the Scope of Work, Budgets and Schedule are submitted to and approved by the Public Works Director. The total funding for the Task Orders in Phase Two shall not exceed $429,564. The total cost for all approved work under Phase One and Two shall not exceed $616,364.

If grant funds are remaining after the completion of Phase 1 and 2 above, such funds will be applied to the construction costs of the Saw Mill Canyon to Tanks pipeline.

Only the work tasks to execute the Phase 1 work are included in this work plan. The tasks for Phase 2 will be provided as a supplement to this work plan after the Phase 1 work is complete.

DELIVERABLES/WORK PRODUCTS

The deliverables of this project will include meetings/workshops and site visits, and a series of technical memoranda (TMs). Each TM will include an executive summary as appropriate. The list of deliverables for this project includes:

1. The following meetings/workshops (Total of 5 meetings):
    a. Two meetings with the EPA with regards to the CE request
    b. Meeting to discuss the Tank Meter House flow meter and valve TM
    c. Meeting to discuss the divers report and recommendation for outlet valves on Marlette Lake Dam and Hobart Reservoir Dam
    d. Meeting with State Engineer to Review Dam Safety and Flashboard Installation
2. The following site visits:
    a. One site visit to Saw Mill Canyon Pipeline (combined with one of the meetings)
    b. One site visit to monitor the divers work for Marlette Lake and Hobart Reservoir outlet valves
3. The following technical memoranda:
    a. TM1: Evaluation of the Tanks Meter House Flow Meter and Control Valve
    b. TM2: Review of Diver's Report and Recommendation for Marlette Lake and Hobart Reservoir Outlet Valves
    c. TM3: Marlette Lake Flashboards Evaluation

All the documents described above, with the exceptions of the workshop/meeting material, will be initially presented to the City in draft form for their review. After receiving the City's feedback on their review of the draft document, Black & Veatch will issue a final version of each document that will address the City's comments and incorporate the City's suggestions.

PROJECT SCHEDULE

It is estimated that the timeframe to complete this project is four months from the issuance of the Notice to Proceed. A preliminary project schedule, broken down by the tasks described in the tasks section, is provided in Appendix A and includes timeframes for task completion and associated deliverables.

INCREMENTAL STEPS TO ACCOMPLISH THE WORK PRODUCTS (TASKS)

Black & Veatch has prepared a work plan with tasks specifically crafted to achieve the objectives described above with an integrated, methodical, and efficient approach. This work plan includes the following tasks:

Task 1 - Project Management

Task 2 – Prepare a Submittal to Request a Categorical Exclusion (CE) for the design of a replacement pipeline from Saw Mill Canyon to Tanks

If request for CE is approved by the EPA and a CE is issued, then the design of pipeline will be performed in Phase 2 as mentioned earlier. If supplemental documentation, such as an Environmental Information Document or an Environmental Assessment, is requested by the EPA to grant the CE approval, such document will be prepared and the scope and budget for this task will be adjusted to reflect that effort.

Task 3 – Tank Meter House Flow Meter and Control Valve Evaluation

Task 4 – Condition Assessment of Existing Outlet Control Valves/Piping at the Marlette Lake Dam and Hobart Reservoir Dam.

Task 5 - Meet with the State Engineer to determine the feasibility for installation of flashboards at Marlette Lake for seasonal storage augmentation. Prepare Letter Report on results and determinations from State Engineer with recommendations.

These tasks are described in detail in the Work Plan provided below.

TASK 1 - PROJECT MANAGEMENT

Task 1.1 - Administration and Invoicing

This task includes general administration duties associated with the project, including progress monitoring, scheduling, general correspondence, office administration, invoicing, and communication with City staff to execute work in accordance with scope, budget, and schedule.

Task 1.2 - Project Procedures Manual

A Project Procedures Manual will be prepared for the"Marlette Hobart System Improvements" project. At a minimum, this manual will include updated information on project contacts, a project schedule, a project budget, a Quality Assurance/Quality Control (QA/QC) plan, and other information pertinent to this project execution.

Task 1.3 – Quality Assurance and Control

A Quality Assurance/Quality Control review will be performed using Black & Veatch's standard continuous QC plan. B&V will implement the QA/QC plan to check, as a minimum, design methods, calculations, drawings, specifications, cost estimates, field investigations and measurements, and other technical issues associated with the Project design.

TASK 2 – PREPARE A SUBMITTAL TO REQUEST A CATEGORICAL EXCLUSION (CE) FOR THE DESIGN OF A REPLACEMENT PIPELINE FROM SAW MILL CANYON TO TANKS

Task Description

An information packet for the project will be prepared to provide the information needed to request a Categorical Exclusion (CATEX) in accordance with EPA Publication No. 315-K-08-001, Chapter 2 and the Cross-Cutter Coordination and Consultation Process identified in Appendix C. Documentation will include:

1) Concurrence from the applicable environmental agencies on the crosscutter list at: http://www.epa.gov/region4/water/gtas/workbookdocs/crosscutter_chart.pdf. Typically this list will include the following:
    a. The State Historic Preservation Office,
    b. The US Fish and Wildlife Service,
    c. The US Army Corps of Engineers,
    d. Other crosscutter federal agencies as appropriate.
2) Detailed description of the project and/or preliminary engineering report along with any site plan showing the project location and its extent. Documents will clearly describe the project, including pipe sizes and lengths, etc.
3) This will also include preparing a letter report of the species review that will be used for recommendations to the appropriate Federal, State and crosscutter agencies. A sub consultant cost of $35,000 is budgeted for this work.
4) Any city or regional maps that show the project in relation to the local area and help demonstrate the limited nature of the project.
5) Information regarding the environmental results of the proposed project as referenced in EPA's Projected Environmental Results for Drinking Water Projects at http://www.epa.gov/region4/water/gtas/workbookdocs/projected ENV Results DW102407.pdf.

Two meetings with EPA to discuss the CE process are budgeted.

If EPA determines that an Environmental Information Document or an Environmental Assessment will be necessary, a revised Task Description, Scope of Services, Budget and Schedule will be prepared and submitted to EPA for approval and funding prior to proceeding.

TASK 3 – TANKS METER HOUSE FLOW METER AND CONTROL VALVE INVESTIGATION

The Tanks storage tank facilities consist of a 20,000 gallon steel storage tank that receives water from Marlette Lake, Hobart Reservoir, and East Slope collection system via an 18

inch raw water pipeline. There are two outlet pipelines that emerge from this tank that discharge raw water to Story County and Carson City. The City has reported that the 10-inch diameter line to Carson City has a control valve and flow meter and its capacity is limited to 2,000 gpm. The control valve closes when the flow reaches around 2,000 gpm. The City has requested B&V to investigate the valve and flow meter, verify its operation, and prepare recommendations for improvements in order to get more flow through the Meter House to the pipeline servicing the Quill Water Treatment Plant.

Task 3.1 – Tank Meter House Valve and Flow Meter Investigation TM

B&V will review the installation of the Tank meter house valve and flow meter including the mechanical piping arrangement and electrical and I&C setup to evaluate the modifications needed.

B&V will prepare a technical memorandum (TM) presenting the evaluation of the valve and flow meter and provide recommendations for repairs as required. A draft and final TM will be prepared, and the City's comments on the Draft TM will be incorporated in the Final TM. One meeting is included in the budget for review of TM1

Deliverable: TM1: Control Valve and Flow Meter Technical Memorandum

TASK 4 - ASSESS CONDITION AND DEVELOP METHOD TO REPLACE EXISTING OUTLET CONTROL VALVES ON THE MARLETTE LAKE DAM AND HOBART RESERVOIR DAM

B&V will review the existing data and information provided by the State on the outlets for Marlette Lake dam and Hobart Reservoir dam. In addition to reviewing the existing as-built data provided by the City and State, field investigation of the existing valves and outlet pipes would be necessary. It is anticipated that an underwater investigation would be required to accurately characterize the configuration and condition of the existing facilities that are submerged. The City/State will contract directly with a local diving company that specializes in performing underwater investigations. The scope of work does not include the effort associated with doing underwater investigation. B&V will coordinate with the City/State selected firm in terms of the information needed to ascertain the condition of existing facilities. B&V engineer will be present onsite for one day to witness the underwater video inspection work performed by the divers.

Based on the review of the available information and the inspection report provided by the divers, B&V will evaluate and make recommendations on the repair/replacement of the existing valves. This evaluation and recommendation will be provided to the City/State in the form of a technical memorandum.

One site visit and one meeting to discuss the TM are included in the budget

Deliverable: TM2: Review of Diver's Report and Recommendation for Marlette Lake and Hobart Reservoir Outlet Valves

TASK 5 - INVESTIGATE FEASIBILITY AND PREPARE PRELIMINARY PLANNING FOR INSTALLATION OF FLASHBOARDS AT MARLETTE LAKE FOR SEASONAL STORAGE AUGMENTATION

The use of seasonal flashboards to allow seasonal augmentation of storage in Marlette Lake has been reviewed by the State Buildings and Grounds, the Nevada Department of Wildlife, and Carson City. There is a desire to continue the planning process for the installations of seasonal flashboards on the existing dam spillway. This work task will include the preliminary planning for the seasonal flashboards, meeting with the Nevada State Engineer to determine if there are dam safety issues that need to be considered. Based on the discussions with the State Engineer and review of available data, B&V will prepare a memorandum summarizing the findings and recommendations related to seasonal flashboards installation. The TM will only report the State Dam Safety code requirements and summarize the discussions with the State Engineer with regards to dam safety including issues, if any, raised by the State Engineer. One meeting with State Engineer to Review Dam Safety and Flashboard Installation

Deliverable: TM3: Marlette Lake Flashboards and Dam Safety Evaluation

PROJECT BUDGET

The project budget enclosed in Appendix B provides a breakdown of the costs associated with the work products and tasks described in this work plan.

SOURCE OF MATCHING FUNDS

As required by the Appropriations Act, the City will provide matching funds for the 45 percent of the total cost of this project or $ 277,364 of the total cost of $616,364. The total budget for Phase 1 is $186,800.

MEASURES USED TO EVALUATE THE SUCCESS OF THE WORK PRODUCTS AND ENVIRONMENTAL BENEFITS AND OUTCOMES

This work effort will provide essential investigations, planning, and analyses to identify feasible solutions to enhance the existing State System to continue reliable and sustainable water delivery to the City and Storey County.

The environmental benefits associated with this project include:

- Maintain a high quality water supply for the City and Storey County
- Increase water supply for blending to lower uranium levels in the City's water supply

Given the nature of this project, the success of the work products and environmental benefits and outcomes will be evaluated by assessing how the project deliverables (technical memoranda) address the objectives of this project. Completion of new pipeline and other facilities identified in this project in subsequent phases would ultimately validate the success of the work products and environmental benefits.

LOCATION MAP

The location map of the water system, which is the focus of this project, is provided in Figure 1 at the beginning of this document.

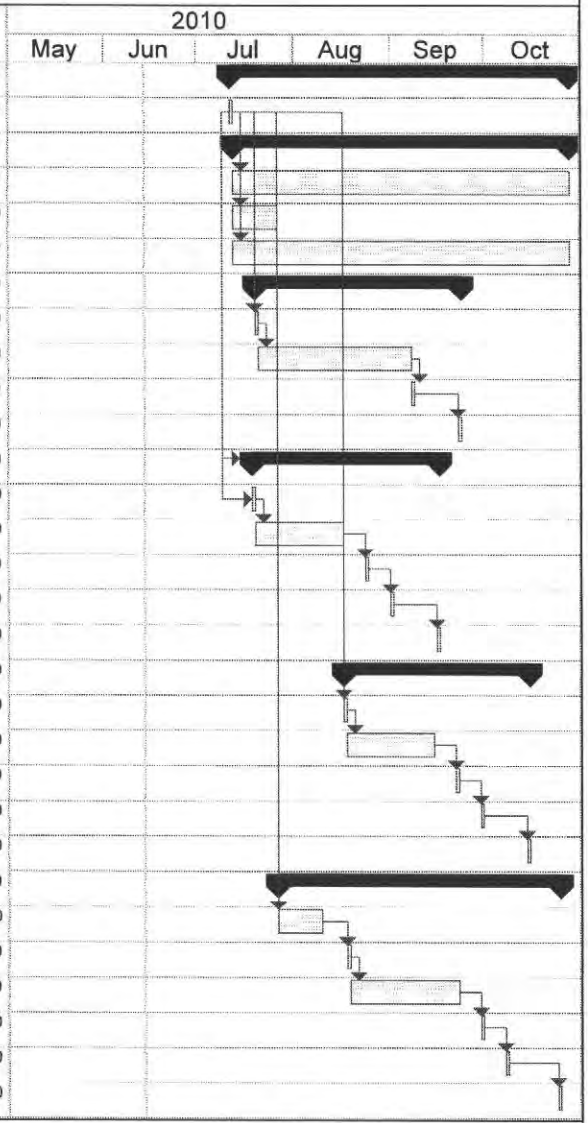
REPORTING

The project will prepare Quarterly Reports. The last Quarterly Report will serve as a Final Report. Quarterly Reports will include an executive summary of work done to date and how effective the project was in achieving the stated environmental and public health objectives. Quarterly Reports will also include any deliverable produced during the reporting quarter. Per EPA guidance, the following quarterly report schedule will be followed:

Reporting Period	Report Due Date
January 1 - March 31	April 30
April 1 - June 30	July 31
July 1 - September 30	October 31
October 1 - December 31	January 31

Carson City
Saw Mill Canyon Pipeline/Water Delivery Planning
APPENDIX A - Project Schedule

ID	Task Name	Duration	Start	Finish
1	**Carson City Saw Mill Canyon Pipeline and Water Delivery Planning**	**79 days**	**Mon 7/12/10**	**Thu 10/28/10**
2	EPA Notice to Proceed	1 day	Mon 7/12/10	Mon 7/12/10
3	**TASK 1 - PROJECT MANAGEMENT AND COORDINATION**	**78 days**	**Tue 7/13/10**	**Thu 10/28/10**
4	Task 1.1 Administration and Invoicing	78 days	Tue 7/13/10	Thu 10/28/10
5	Task 1.2 Project Procedures Manual	10 days	Tue 7/13/10	Mon 7/26/10
6	Task 1.3 Quality Assurance and Control	78 days	Tue 7/13/10	Thu 10/28/10
7	**TASK - 2 PREPARE A CE SUBMITTAL FOR PIPELINE AND TANK**	**48 days**	**Tue 7/20/10**	**Thu 9/23/10**
8	Meeting with EPA	1 day	Tue 7/20/10	Tue 7/20/10
9	CE Document Preparation	35 days	Wed 7/21/10	Tue 9/7/10
10	CE Document Submittal	1 day	Wed 9/8/10	Wed 9/8/10
11	Review Meeting with City and EPA and Approval	1 day	Thu 9/23/10	Thu 9/23/10
12	**TASK 3 - TANK METER HOUSE VALVE AND FLOW METER INVESTIGATION**	**44 days**	**Mon 7/19/10**	**Thu 9/16/10**
13	Data Review and Site Visit	1 day	Mon 7/19/10	Mon 7/19/10
14	Task 3.1Tank Meter House Valve and FM Technical Memorandum (TM1)	20 days	Tue 7/20/10	Mon 8/16/10
15	Draft TM1 Submittal	1 day	Tue 8/24/10	Tue 8/24/10
16	Review Meeting	1 day	Wed 9/1/10	Wed 9/1/10
17	Final TM1 Submittal	1 day	Thu 9/16/10	Thu 9/16/10
18	**TASK 4 - CONDITION ASSESSMENT FOR OUTLET CONTROL VALVES**	**44 days**	**Tue 8/17/10**	**Fri 10/15/10**
19	Diving Inspection	1 day	Tue 8/17/10	Tue 8/17/10
20	TM2 - Evaluation of Outlet Valves	20 days	Wed 8/18/10	Tue 9/14/10
21	Draft TM2 Submittal	1 day	Wed 9/22/10	Wed 9/22/10
22	Review Meeting	1 day	Thu 9/30/10	Thu 9/30/10
23	Final TM2 Submittal	1 day	Fri 10/15/10	Fri 10/15/10
24	**TASK 5 - FEASIBILITY FOR FLASHBOARDS INSTALLATION AT MARLETTE**	**65 days**	**Tue 7/27/10**	**Mon 10/25/10**
25	Review Background Information	10 days	Tue 7/27/10	Mon 8/9/10
26	Meeting with State Engineer	1 day	Wed 8/18/10	Wed 8/18/10
27	TM3 - Flashboards Evaluation	25 days	Thu 8/19/10	Wed 9/22/10
28	Draft TM3 Submittal	1 day	Thu 9/30/10	Thu 9/30/10
29	Review Meeting	1 day	Fri 10/8/10	Fri 10/8/10
30	Final TM3 Submittal	1 day	Mon 10/25/10	Mon 10/25/10



Project: EPA Work Plan Schedule

Task — Milestone — External Tasks
Split — Summary — External Milestone
Progress — Project Summary — Deadline

Mon 6/14/10

Carson City
Saw Mill Canyon Pipeline and Water Delivery Planning
APPENDIX B - Hours and Fee Estimate

Project Element & Task Descriptions	Labor Hours	Labor Cost	Expenses	Total Cost
TASK 1 - PROJECT MANAGEMENT AND COORDINATION	**166**	**$30,400**	**$1,300**	**$31,700**
Task 1.1 Administration and Invoicing	100	$16,800	$1,000	$17,800
Task 1.2 Project Procedures Manual	26	$4,100		$4,100
Task 1.3 Quality Assurance and Control	40	$9,500	$300	$9,800
TASK - 2 PREPARE A CE SUBMITTAL FOR PIPELINE AND TANK	**178**	**$32,900**	**$41,000**	**$73,900**
Coordination with Governmental Agencies	76	$14,100	$2,000	$16,100
Prepare Project Description	60	$10,800	$2,000	$12,800
Environmental Results Preparation	42	$8,000	$37,000	$45,000
TASK 3 - TANK METER HOUSE FLOW METER AND VALVE EVALUATION				
Task 3.1 - Tank Meter House Valve and Flow Meter Investigation TM	**120**	**$22,600**	**$1,500**	**$24,100**
TASK 4 - CONDITION ASSESSMENT FOR OUTLET CONTROL VALVES	**144**	**$29,000**	**$2,000**	**$31,000**
TASK 5 - FEASIBILITY FOR FLASHBOARDS INSTALLATION AT MARLETT	**118**	**$24,100**	**$2,000**	**$26,100**
TOTAL FEE	**726**	**$139,000**	**$47,800**	**$186,800**

Exhibit B

SCOPE OF WORK

Saw Mill Canyon Raw Water Pipeline Replacement and Tank Project

PROJECT UNDERSTANDING

The Marlette-Hobart Water System (MHWS) includes a series of control structures, water supply pipelines, and tank storage facilities west of Carson City. Water from Marlette Lake is pumped to the Hobart Creek/Hobart Reservoir drainage area via a 12 inch diameter pipeline. Water from Hobart Reservoir discharges into Franktown Creek and is conveyed to the Red House Diversion Structure. The Red House Diversion structure diverts water from the East Slope watershed (conveyed by the East Slope Collection Pipeline) and Franktown Creek into an 18 inch diameter pipeline which conveys this water to a 22,000 gallon capacity steel storage tank at the Tanks. The Tanks provides water to Storey County via a 10 inch diameter pipeline and to Carson City's Quill Water Treatment Plant (WTP) via a 10 inch diameter steel pipeline. Water received at the Quill WTP is treated and sent to the City's distribution system.

Black & Veatch (B&V) prepared the Marlette Hobart System Improvements Technical Memorandum (March 2010) that documented the investigation and provided recommendations to maximize the supply from the State's water rights applicable to the MHWS. This prior work identified a series of improvements needed to provide the increased supply to the City water system.

Under the Sawmill Canyon Phase 1 Project, B&V prepared a Submittal to Request a Categorical Exclusion (CE) for the design of the replacement pipeline from Sawmill Canyon to Tanks. The initial scope of work that identified the project components states that any additional documentation required would be prepared under a separate project (Refer to Phase 1 Scope of Work, Task 2). Further project component requirements, such as a new tank and other flow management improvements, triggered the Environmental Protection Agency (EPA) to require supplemental documentation, such as an Environmental Information Document (EID), be prepared and submitted to cover all proposed improvements and to supplement the previous submittal. The EPA agrees that the Basis of Design Report, being prepared under this scope of work, will serve as that supplemental documentation.

Flow Management Improvements

The Tanks storage tank facilities consist of a 22,000 gallon steel storage tank that receives water from Marlette Lake, Hobart Reservoir, and the East Slope collection system via an 18 inch diameter raw water pipeline from the Red House Diversion Structure. This existing tank now serves to assist in controlling flows to

two outlet pipelines that supply raw water to the Storey County and Carson City raw water supply systems. Each outlet pipeline consists of an 8" manual gate valve, 8" magnetic flow meter, and 8" motorized plug valve. The Red House Diversion Structure includes a motorized valve on the raw water pipeline. The State has reported that they have made SCADA improvements to monitor the operation of the existing tank and close the Tanks outlet valves and the valve at Red House in order to minimize overflowing the tank and spilling water.

The purpose of this task is to review and document the existing control scheme at the Tanks and Red House and make modifications to separate Carson City's supply from the siphon head works, add piping and valves to transport the City supply to a new tank at a lower elevation than the existing 22,000 tank, and to divert potential spills from the existing tank to the new larger storage tank.

Saw Mill Canyon Tank Evaluation and Design

Operation of the Marlette Hobart Water System (MHWS) has resulted in spills at The Tanks, which discharges water on the hillside and drains to McEwen Creek. The State has been issued a discharge permit from NDEP that limits the amount of overflow spills. The City is interested in increasing storage volume at the Tanks to allow containment of mismatches between inflow and outflow and to provide larger level control bands for increased stability of water delivered to Storey County and Quill WTP.

A new tank site will be evaluated and sizing of the new storage tank and associated monitoring and control requirements will be confirmed based on a hydraulic and control analysis and in coordination with Carson City and the State. Upon agreement on size and site, a scope of work, budget and schedule will be submitted for a final design.

Saw Mill Canyon to Tanks Pipeline Replacement

The existing pipeline from the Red House Diversion Structure to the Tanks is 18 inches diameter and constructed of 12 gauge steel pipe wrapped in coal tar paper. The pipeline is buried shallow or exposed in parts of the alignment. The reach of this pipeline between Saw Mill Canyon and the Tanks is partially collapsed and leaking. Under this project, the City and State want to replace approximately a 4,000 LF section of this pipe from Saw Mill Canyon to the Tanks with a new pipe since this section of the pipeline has a reduced capacity and may fail due to the damage. This water supply is the sole water source for the Storey County Water System.

SCOPE OF WORK

The following tasks provide a detailed description of the work to be performed under this project:

TASK 1 – PROJECT MANAGEMENT

The purpose of this task is to manage the efforts of project team members; review work progress; coordinate Quality Assurance/Quality Control (QA/QC) procedures; and otherwise direct work so as to ensure satisfactory completion of work elements on schedule, within budget, and in conformance with City and State standards. This includes reviewing former work pertaining to the project; reporting budget and status; conducting and documenting project correspondence and meetings; and performing quality control reviews of deliverables through the preliminary design phase of the project. These activities are further explained below.

Task 1.1 – Project Administration and Coordination

B&V will provide the City with monthly progress reports to apprise key participants of project development and status. Each progress report will contain: a description of project status in terms of both schedule and budget, work completed in the last month, and work planned for the next month. Informal meetings and phone contact will be maintained with City representatives and other team members regarding project status, as necessary, between regular reports. Additionally, B&V will prepare the quarterly status reports for the EPA.

B&V will manage and implement record keeping for the Project, including filing of calculations, meeting notes, correspondence, memoranda, pertinent information pertaining to this scope of services, and all documents created, prepared, or used during the execution of the work. A project file log will be prepared and maintained throughout the project.

Task 1.2 – Quality Assurance and Control

A QA/QC review will be performed using B&V's standard QC plan. B&V will implement the QA/QC plan to check, as a minimum, design methods, calculations, drawings, specifications, cost opinions, and other technical issues associated with the Project. B&V will prepare a Quality Control Inspection Plan checklist to highlight the various inspection requirements during the construction phase of the project.

Task 1.3 – Collection of Background Information

Data relevant to the engineering work to be performed will be identified, collected, and assembled. The primary purpose will be to identify data required from the City to ensure that the work proceeds in accordance with the requirements of the entities involved. Information shall include, but not be limited to, existing maps, reports, and other data that are readily available in hardcopy or electronic format. B&V will not be responsible for accuracy of data and documentation prepared by others and used in the development of deliverables.

Task 1.4 – Kick-Off Meeting/Workshop

B&V will prepare and distribute a project review meeting agenda for a kick-off meeting at the City's Public Works office involving key personnel from the City, State, and other identified stakeholders. This Workshop will clarify the project requirements, review pertinent available data, review project staffing and organization, and present the initial work schedule. An agenda and meeting notes will be prepared and distributed to all attendees.

The following items will be discussed at the meeting:

- Work Scope and Purpose
- Existing Facilities and Functions
- Environmental and Permitting Constraints
- Pipeline Alignment and Material Alternatives
- Flow and Pressure Considerations
- Tank Site Evaluation Criteria
- Tank Sizing Criteria
- Operations and Maintenance
- City/End User Preferences
- Constructability Issues

Task 1.5 – Project Coordination Meetings

Project coordination meetings will be scheduled with the City, State, and other identified key stakeholders. These meetings will provide a platform for issues and concerns to be discussed so that the project may be shaped according to the input of key participants. Three (3) project coordination meetings are included (Task 2 Technical Memorandum [TM] Review, Basis of Design Memo Review, and one additional meeting). All meetings will be held in Carson City. B&V will be responsible for maintaining agendas, meeting notes, and attendance records.

Task 1.6 – Project Coordinator and Liaison

This task provides time for the Project Director, Ira Rackley, to work with the City and provide overall project coordination and serve in a liaison role between the City, State, and other project stakeholders. This task will be used on an as needed basis to assist the City.

Task 1 Deliverables

- Meeting agenda and notes
- Monthly invoices and progress reports
- EPA Quarterly Status Reports

TASK 2 – PIPELINE AND TANK BASIS OF DESIGN MEMORANDUM

B&V will prepare a design memorandum to identify site requirements and basic design criteria for the project components which will be used as the basis for the detailed design.

Task 2.1 – Hydraulic and Control Analysis

A hydraulic and control analysis will be completed to review the new and existing conveyance systems connecting to The Tanks (including the gravity feed from Red House and both pressure mains to Storey County and Quill WTP) to determine the necessary control features capable of eliminating or significantly reducing the risk of spills at the Tanks and to confirm the appropriate new tank size. We will evaluate the proposed tank site from a hydraulic standpoint and will coordinate with Carson City and the State regarding hydraulic and control elements. Results of this task will be documented in the Basis of Design Memorandum under Task 2.3.

Task 2.2 – Tank Site Evaluation

The proposed tank site evaluation will be provided and a TM will be prepared to document results of the evaluation. The TM will include:

- archaeological and environmental permitting analysis
- evaluation of constructability issues at the site
- evaluation of access to the site
- evaluation of geotechnical parameters to determine cost impact to the tank
- conceptual level site plan

Task 2.3 – Basis of Design Memorandum

A basis of design memorandum (BDM) will be prepared to provide the basis for the subsequent design task. Items to be included in the BDM are as follows:

Pipeline

- Preliminary design criteria for pipeline and appurtenances based on the hydraulic analysis performed under the Marlette Hobart Improvements project performed by B&V: pipe material, location, required appurtenances
- Pipeline constructability issues
- Construction constraints relative to operation of existing facilities
- Permitting requirements, if any.
- Preliminary schematics and sketches/drawings
- Implementation Section including preliminary opinion of probable construction cost and construction schedule

Tank

- Tank design criteria: tank material, foundation requirements, seismic connections, appurtenances, and electrical and I&C criteria
- Implementation Section including preliminary opinion of probable construction cost and construction schedule
- The BDM will provide a recommended tank site and size
- Preliminary schematics and sketches/drawings

The work completed will be summarized and presented to City staff in a technical review meeting. The comments obtained from the City at the workshop will be documented in minutes and incorporated into the final BDM.

Five (5) copies of the draft BDM will be submitted to the City for review. Following receipt and resolution of review comments, five (5) copies of the final BDM will be prepared and distributed to the City.

Task 2 Deliverables

- 5 copies of Draft TM
- 5 copies of Final TM
- 5 copies of Draft Basis of Design Memorandum
- 5 copies of Final Basis of Design Memorandum
- Meeting agenda and notes

BASIS FOR FEE ESTIMATE

Project Schedule (requires receipt of survey and geotechnical information on December 2, 2010)

The scope of work is based on the following schedule:

- NTP – December 16, 2010

- Task 2 TM Complete – February 7, 2011
- BDM Complete – March 4, 2011

Exclusions

- Survey and geotechnical investigations
- Environmental documentation
- Physical radio path study
- Final design, bid and construction phase services (to be negotiated at a later date)
- Property/Right-of-Way acquisition

Assumptions

- Pipeline will be installed below grade along the inside cut of the road.
- Solar panels with battery pack will be used for local power at remote sites, including the tank site
- Tank will be above grade welded steel with concrete ringwall foundation and will be designed in accordance with AWWA D100. Only one tank site will be evaluated under this scope of work.

Carson City
Saw Mill Canyon Pipeline and Tank Project - Phase 2, Preliminary Design
Hours and Fee Estimate

Project Element & Task Descriptions	Client Serv Manager	Project Director	Senior Specialist/ QC	Project Manager	Project Engineer	Hydraulics Engineer	Staff Engineer	Structural Engineer	Architect	I&C Engineer	Electrical Engineer	CAD/Tech	Clerical	Other	Labor Hours	Labor Cost	Expenses	Subconsultants	Total Cost
	Carlson	Rackley	Various	Enson	Nielson	Lecina	Wallin	Park	Krna	Hise	Pudota	Various	Various						
Billing Rate	$265	$285	$242	$200	$160	$155	$145	$175	$185	$155	$165	$135	$88	$225					
TASK 1 - PROJECT MANAGEMENT AND COORDINATION																			
Task 1.1 Project Administration and Coordination	9			12									6		297	$ 77,672	$ 650	$ -	$ 78,322
Task 1.2 Quality Assurance and Control (Hours under individual tasks)															27	$ 5,372			$ 5,372
Task 1.3 Collection of Background Information							4								0	$ -			$ -
Task 1.4 Kick-Off Meeting/Workshop	4	4			4										4	$ 580			$ 580
Task 1.5 Project Coordination Meetings (3 total)	12	12		12	18										12	$ 2,840	$ 200		$ 3,040
Task 1.6 Project Coordinator and Liaison		200													54	$ 11,880	$ 250		$ 12,130
															200	$ 57,000	$ 200		$ 57,200
TASK 2 - PIPELINE AND TANK BASIS OF DESIGN MEMORANDUM																			
Task 2.1 - Hydraulic and Control Analysis	4		4	4	16	190	8			16	8	8	4		620	$ 99,019	$ 700	$ 33,000	$ 132,719
Task 2.2 - Tank Site Evaluation TM	4		4	8	8		24	4		4	4	16	4		262	$ 41,260		$ -	$ 41,260
Task 2.3 - Basis of Design Memorandum	4		10	36	48	16	60	8	8	16	16	40	12	4	80	$ 12,917	$ 100	$ 33,000	$ 46,017
															278	$ 44,842	$ 600		$ 45,442
TOTAL FEE	37	216	18	72	94	206	96	12	8	36	28	64	26	4	917	$ 176,691	$ 1,350	$ 33,000	$ 211,041

Exhibit C

GRANT APPLICATION PACKAGE

FOR

SAW MILL CANYON PIPELINE AND WATER DELIVERY PLANNING

Submitted by:
Carson City Department of Public Works
3505 Butti Way
Carson City, NV 89701

Submitted to:
Grants Management Office (MTS-7)
Management and Technical Services Division
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105-3901

March 2010

Introduction

Carson City (City) is taking a proactive approach to ensure a sustainable and reliable water supply for its customers. The proposed Marlette-Hobart System Improvements Project (Project) between the State of Nevada (State) and the City seeks to maximize delivery and hydraulic capacity of the State's raw water sources in the Marlette-Hobart conveyance system, Franktown Creek and the East Slope system (collectively referred as the State System) to the City's supply system as well as the Storey County water system.

Background

Carson City has a current population of approximately 57,000 people and a controlled growth plan that sets a cap on annual growth at a maximum of 3 percent per year and a maximum population of 80,000 people. Over the last two years, Carson City has completed a Water Supply Master Plan that identifies the needed water supply and water treatment and transmission facilities to meet its build out population. While the Cities growth has tapered off during the last several years, the City's supplies have experienced impacts due to new water quality regulations and the existing facilities have not been upgraded to meet new system demands. In particular, the City's distribution system experiences storage and pressure issues at several locations, particularly during high demand periods.

Water quality monitoring results indicate that several wells in the City's potable water system have arsenic and uranium concentrations that exceed the current United States Environmental Protection Agency (USEPA) maximum contaminant level (MCL) of 10 µg/L for arsenic and 30 µg/L for uranium. Arsenic impacted wells include Wells 4, 7, 11, 24, 45, 47, 49, 53, and 54. The City is has completed the constructing an arsenic treatment facility. However, this new facility will only treat groundwater produced by Wells 4 and 49.

Uranium impacted wells include Wells 5, 6, 7, 10B, 34, 46, 51, and 55. The Water Supply Master Plan has identified the high quality raw water from the MHWS as the primary source of water to provide blending of the Uranium impacted wells to bring them into compliance with the regulatory standards.

The Eagle Valley Basin, the largest hydrographic resource area for the City, has experienced a decline in well yields and drier than normal climate has limited available surface water resources and reduced groundwater recharge. This situation has apparent impacts to the overall production of water available from the City's existing water rights granted by the State's Engineer Office.

Currently, through efficiently and conjunctively operating its existing water resources and facilities, the City's Department of Public Works has been able to manage these challenges and continue providing adequate water quality and quantity to its population. However, it is clear that this situation is not sustainable and that the City will not be able to reliably provide adequate drinking water service unless the water from the MHWS can be made into a reliable source of water for the City.

Through implementation of the development of additional ground water wells in adjacent hydrographic resource areas and the development of an inter-county water system, the City has a firm water supply for a population of approximately 65,000 people. The development

of additional water supplies from the (MHWS) has been identified as the primary source of water for the City to meet its build out population limit of 80,000 people.

The MHWS is an existing State owned and operated system that has provided water supplies to Carson City and Storey County in Nevada since the Virginia City area was a booming Gold and Silver mining town. This system was specially constructed in the 1860s to provide needed water supply to Virginia City and surrounding mining communities. Over the years, the system was augmented to provide water deliveries to Carson City. Today, this system is the sole source of water for the Story County water system and also provides Carson City with a significant portion of its present day water supply.

The Marlette-Hobart System or State System consists of the Marlette Lake, Hobart Lake, and associated network of piping and pump stations to convey water to the City and Storey County. The project area is shown in Figure 1. The pipeline designated for replacement was severely damaged by heavy equipment using the roadway that the pipeline occupies to access and fight a recent major forest fire.

Water from Marlette Lake (approximate EL 7838) is pumped to the Hobart Creek/Hobart Lake drainage area via a 12 inch pipeline (Refer to EPA Project No. XP-97966501). Water from Hobart Reservoir (El 7650) discharges into Franktown creek and is conveyed to the Red House Diversion Structure. The Red House Diversion structure diverts water from the East Slope watershed (conveyed by the East Slope Collection Pipeline) and Franktown Creek into an 18 inch pipeline which conveys this water to a 22,000 gallon capacity steel storage tank at the Tanks (approximate EL 7000)[1]. The Tanks provides water to Storey County via a 10 inch pipeline and to Carson City's Quill Water Treatment Plant (WTP) via a 10 inch steel pipeline. Water received at the Quill WTP is treated and sent to the City's distribution system.

The City's Quill WTP currently receives water from three sources: Ash Canyon, King Canyon, and State System. The existing rated capacity of Quill is approximately 4 MGD (2,800 gpm) with an ultimate build out capacity of 9.2 MGD (6,400 gpm). Currently, The State System does not have the capacity to deliver this quantity of water to the Quill WTP.

Preliminary hydraulic yield analysis indicates that the State System may be able to yield approximately 8,000 gpm with frequent yields in excess of 9,000 gpm. These levels of flow generally occur during the spring runoff period on all of the tributaries included in this analysis. In the future, it is envisioned that once necessary improvements are made to the MHWS the operation of the Quill WTP will take water from the State System first and that Ash and Kings Canyons will provide the secondary, supplemental supply to allow the Quill WTP to operate at or near full capacity. This will also allow flows from the Ash and Kings Canyon to recharge the ground water basin.

[1] The 24 inch pipeline reduces to an 18 inch steel pipeline approximately 2000 feet below the Red House Diversion Structure.

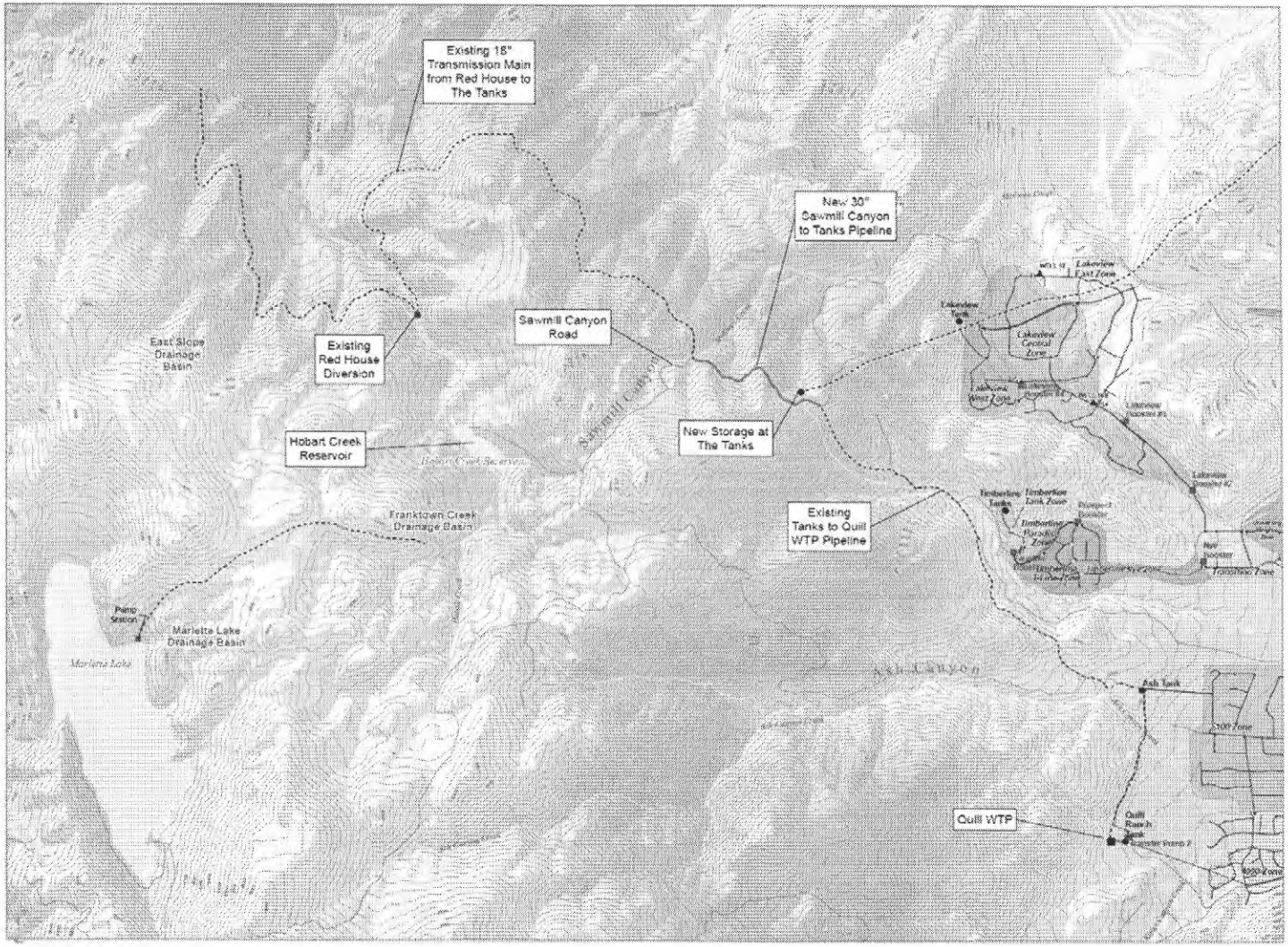


Figure 1: Marlette Hobart Water System Overview

PROJECTS GOALS/OBJECTIVES

The goal of this project is to enhance reliability and provide a sustainable water supply for the City and Storey County. The work proposed in this Work Plan is critical in maintaining the water supply for the City and Storey County since the State System is a key source of water available to meet its supply needs. Additional benefits and outcomes of the Project include:

- Maintain a high quality water supply for the City and Storey County
- Provide reliable and sustainable water supply for the City to meet water demands under build out conditions.
- Increase water supply for blending to lower uranium levels in the City's water supply
- Optimize hydraulic performance of the conveyance, storage, and distribution facilities

The City has identified raw water supplies to accommodate a population of approximately 65,000 people without an expansion of the State System. The City would increase the size of the replacement pipeline to provide the additional supply for the build-out population of 80,000 people and to accommodate the use of MHWS water supply for groundwater recharge. This additional water supply represents less than a thirty percent increase in water supply and population increase.

The City has already completed a preliminary study and identified the necessary improvements for the overall Project. Several projects (e.g. pipeline replacements, water treatment plant expansion, pump station upgrade, etc.) have been identified and prioritized in the City's implementation plan over a total of 8 phases. The proposed Work Plan detailed below contains some of the projects identified in overall Project implementation plan. The projects or objectives proposed for this Work Plan will be broken into three phases as follows:

Phase 1

1. Prepare a submittal for a request for a Categorical Exclusion (CE) for the design of the replacement pipeline from Saw Mill Canyon to the Tanks. This will also include preparing a letter report of the species review that will be used for recommendations to the appropriate Federal, State and crosscutter agencies. If recommendations recommend further assessment, the SOW, Budget and Schedule will be adjusted to reflect the recommended action.
2. Evaluate Tanks Meter House flow meter and control valve operation and recommend improvements
3. Assess condition and provide recommendations to replace existing outlet control valves on the Marlette Lake Dam and Hobart Reservoir Dam
4. Investigate feasibility and prepare preliminary planning for installation of flashboards at Marlette Lake for seasonal storage augmentation

Phase 2

1. If the assessment of species and CE submittal under Phase 1 result in an EID or EA being necessary, the SOW, Budget and Schedule will be adjusted to reflect the recommended action. If work done under the CE submittal is approved by EPA, then design documents will be prepared for the Saw Mill Canyon Pipeline. This may or may not include supplemental storage at The Tanks to provide the current operations with additional capacity to avoid occasional spills.
2. The Tank Meter House flow meter and control valve assessment under Phase 1 will recommend improvements to the existing system which will be included in the Saw Mill Canyon Pipeline design.
3. Based on the recommendations from the outlet valves evaluation and discussion with State Engineer in Phase 1, the SOW, Budget and Schedule for the Marlette Lake Water Management Plan, will submitted for review and approvals. It the State Engineer recommendations indicate that installing flashboards is not feasible, then the Water Management Plan will not be pursued.

Phase 3

If any grant funds are remaining after the completion of Phase 1 and Phase 2, they will be applied to the construction of the pipeline.

Only the work tasks to execute the Phase 1 work are included in this work plan. The tasks for Phase 2 and Phase 3 will be provided as a supplement to this work plan after the Phase 1 work is complete.

DELIVERABLES/WORK PRODUCTS

The deliverables of this project will include meetings/workshops and site visits, and a series of technical memoranda (TMs). Each TM will include an executive summary as appropriate. The list of deliverables for this project includes:

1. The following meetings/workshops (Total of 5 meetings):
    a. Two meetings with the EPA with regards to the CE request
    b. Meeting to discuss the Tank Meter House flow meter and valve TM
    c. Meeting to discuss the divers report and recommendation for outlet valves on Marlette Lake Dam and Hobart Reservoir Dam
    d. Meeting with State Engineer to Review Dam Safety and Flashboard Installation

2. The following site visits:
    a. One site visit to Saw Mill Canyon Pipeline (combined with one of the meetings)
    b. One site visit to monitor the divers work for Marlette Lake and Hobart Reservoir outlet valves

3. The following technical memoranda:
    a. TM1: Evaluation of the Tanks Meter House Flow Meter and Control Valve
    b. TM2: Review of Diver's Report and Recommendation for Marlette Lake and Hobart Reservoir Outlet Valves
    c. TM3: Marlette Lake Flashboards Evaluation

All the documents described above, with the exceptions of the workshop/meeting material, will be initially presented to the City in draft form for their review. After receiving the City's feedback on their review of the draft document, Black & Veatch will issue a final version of each document that will address the City's comments and incorporate the City's suggestions.

PROJECT SCHEDULE

It is estimated that the timeframe to complete this project is four months from the issuance of the Notice to Proceed. A preliminary project schedule, broken down by the tasks described in the tasks section, is provided in Appendix A and includes timeframes for task completion and associated deliverables.

INCREMENTAL STEPS TO ACCOMPLISH THE WORK PRODUCTS (TASKS)

Black & Veatch has prepared a work plan with tasks specifically crafted to achieve the objectives described above with an integrated, methodical, and efficient approach. This work plan includes the following tasks:

Task 1 - Project Management

Task 2 – Prepare a Submittal to Request a Categorical Exclusion (CE) for the design of a replacement pipeline from Saw Mill Canyon to Tanks

If request for CE is approved by the EPA and a CE is issued, then the design of pipeline will be performed in Phase 2 as mentioned earlier. If supplemental documentation, such as an Environmental Information Document or an Environmental Assessment, is requested by the EPA to grant the CE approval, such document will be prepared and the scope and budget for this task will be adjusted to reflect that effort.

Task 3 – Tank Meter House Flow Meter and Control Valve Evaluation

Task 4 – Condition Assessment of Existing Outlet Control Valves/Piping at the Marlette Lake Dam and Hobart Reservoir Dam.

Task 5 - Meet with the State Engineer to determine the feasibility for installation of flashboards at Marlette Lake for seasonal storage augmentation. Prepare Letter Report on results and determinations from State Engineer with recommendations.

These tasks are described in detail in the Work Plan provided below.

TASK 1 - PROJECT MANAGEMENT

Task 1.1 - Administration and Invoicing

This task includes general administration duties associated with the project, including progress monitoring, scheduling, general correspondence, office administration, invoicing, and communication with City staff to execute work in accordance with scope, budget, and schedule.

Task 1.2 - Project Procedures Manual

A Project Procedures Manual will be prepared for the"Marlette Hobart System Improvements" project. At a minimum, this manual will include updated information on project contacts, a project schedule, a project budget, a Quality Assurance/Quality Control (QA/QC) plan, and other information pertinent to this project execution.

Task 1.3 – Quality Assurance and Control

A Quality Assurance/Quality Control review will be performed using Black & Veatch's standard continuous QC plan. B &V will implement the QA/QC plan to check, as a minimum, design methods, calculations, drawings, specifications, cost estimates, field investigations and measurements, and other technical issues associated with the Project design.

TASK 2 – PREPARE A SUBMITTAL TO REQUEST A CATEGORICAL EXCLUSION (CE) FOR THE DESIGN OF A REPLACEMENT PIPELINE FROM SAW MILL CANYON TO TANKS

Task Description

An information packet for the project will be prepared to provide the information needed to request a Categorical Exclusion (CATEX) in accordance with EPA Publication No. 315-K-08-001, Chapter 2 and the Cross-Cutter Coordination and Consultation Process identified in Appendix C. Documentation will include:

1) Concurrence from the applicable environmental agencies on the crosscutter list at: http://www.epa.gov/region4/water/gtas/workbookdocs/crosscutter_chart.pdf. Typically this list will include the following:
    a. The State Historic Preservation Office,
    b. The US Fish and Wildlife Service,
    c. The US Army Corps of Engineers,
    d. Other crosscutter federal agencies as appropriate.

2) Detailed description of the project and/or preliminary engineering report along with any site plan showing the project location and its extent. Documents will clearly describe the project, including pipe sizes and lengths, etc.

3) This will also include preparing a letter report of the species review that will be used for recommendations to the appropriate Federal, State and crosscutter agencies. Since the extent of work is not fully known at this stage, a sub consultant cost of $10,000 is budgeted for this work.

4) Any city or regional maps that show the project in relation to the local area and help demonstrate the limited nature of the project.

5) Information regarding the environmental results of the proposed project as referenced in EPA's Projected Environmental Results for Drinking Water Projects at http://www.epa.gov/region4/water/gtas/workbookdocs/projected ENV Results DW102407.pdf.

Two meetings with EPA to discuss the CE process are budgeted.

If EPA determines that an Environmental Information Document or an Environmental Assessment will be necessary, a revised Task Description, Scope of Services, Budget and Schedule will be prepared and submitted to EPA for approval and funding prior to proceeding.

TASK 3 – TANKS METER HOUSE FLOW METER AND CONTROL VALVE INVESTIGATION

The Tanks storage tank facilities consist of a 20,000 gallon steel storage tank that receives water from Marlette Lake, Hobart Reservoir, and East Slope collection system via an 18 inch raw water pipeline. There are two outlet pipelines that emerge from this tank that discharge raw water to Story County and Carson City. The City has reported that the 10-inch diameter line to Carson City has a control valve and flow meter and its capacity is limited to 2,000 gpm. The control valve closes when the flow reaches around 2,000 gpm. The City has requested B&V to investigate the valve and flow meter, verify its operation, and prepare recommendations for improvements in order to get more flow through the Meter House to the pipeline servicing the Quill Water Treatment Plant.

Task 3.1 – Tank Meter House Valve and Flow Meter Investigation TM

B&V will review the installation of the Tank meter house valve and flow meter including the mechanical piping arrangement and electrical and I&C setup to evaluate the modifications needed.

B&V will prepare a technical memorandum (TM) presenting the evaluation of the valve and flow meter and provide recommendations for repairs as required. A draft and final TM will be prepared, and the City's comments on the Draft TM will be incorporated in the Final TM. One meeting is included in the budget for review of TM1

Deliverable: TM1: Control Valve and Flow Meter Technical Memorandum

TASK 4 - ASSESS CONDITION AND DEVELOP METHOD TO REPLACE EXISTING OUTLET CONTROL VALVES ON THE MARLETTE LAKE DAM AND HOBART RESERVOIR DAM

B&V will review the existing data and information provided by the State on the outlets for Marlette Lake dam and Hobart Reservoir dam. In addition to reviewing the existing as-built data provided by the City and State, field investigation of the existing valves and outlet pipes would be necessary. It is anticipated that an underwater investigation would be required to accurately characterize the configuration and condition of the existing facilities that are submerged. The City/State will contract directly with a local diving company that specializes in performing underwater investigations. The scope of work does not include the effort associated with doing underwater investigation. B&V will coordinate with the City/State selected firm in terms of the information needed to ascertain the condition of existing facilities. B&V engineer will be present onsite for one day to witness the underwater video inspection work performed by the divers.

Based on the review of the available information and the inspection report provided by the divers, B&V will evaluate and make recommendations on the repair/replacement of the existing valves. This evaluation and recommendation will be provided to the City/State in the form of a technical memorandum.

One site visit and one meeting to discuss the TM are included in the budget

Deliverable: TM2: Review of Diver's Report and Recommendation for Marlette Lake and Hobart Reservoir Outlet Valves

TASK 5 - INVESTIGATE FEASIBILITY AND PREPARE PRELIMINARY PLANNING FOR INSTALLATION OF FLASHBOARDS AT MARLETTE LAKE FOR SEASONAL STORAGE AUGMENTATION

The use of seasonal flashboards to allow seasonal augmentation of storage in Marlette Lake has been reviewed by the State Buildings and Grounds, the Nevada Department of Wildlife, and Carson City. There is a desire to continue the planning process for the installations of seasonal flashboards on the existing dam spillway. This work task will include the preliminary planning for the seasonal flashboards, meeting with the Nevada State Engineer to determine if there are dam safety issues that need to be considered. Based on the discussions with the State Engineer and review of available data, B&V will prepare a memorandum summarizing the findings and recommendations related to seasonal flashboards installation. The TM will only report the State Dam Safety code requirements and summarize the discussions with the State Engineer with regards to dam safety including issues, if any, raised by the State Engineer. One meeting with State Engineer to Review Dam Safety and Flashboard Installation

Deliverable: TM3: Marlette Lake Flashboards and Dam Safety Evaluation

PROJECT BUDGET

The project budget enclosed in Appendix B provides a breakdown of the costs associated with the work products and tasks described in this work plan.

SOURCE OF MATCHING FUNDS

As required by the Appropriations Act, the City will provide matching funds for the 45 percent of the total cost of this project or $ 277,364 of the total cost of $616,364. The total budget for Phase 1 is $167,000.

MEASURES USED TO EVALUATE THE SUCCESS OF THE WORK PRODUCTS AND ENVIRONMENTAL BENEFITS AND OUTCOMES

This work effort will provide essential investigations, planning, and analyses to identify feasible solutions to enhance the existing State System to continue reliable and sustainable water delivery to the City and Storey County.

The environmental benefits associated with this project include:

- Maintain a high quality water supply for the City and Storey County
- Increase water supply for blending to lower uranium levels in the City's water supply

Given the nature of this project, the success of the work products and environmental benefits and outcomes will be evaluated by assessing how the project deliverables (technical memoranda) address the objectives of this project. Completion of new pipeline and other facilities identified in this project in subsequent phases would ultimately validate the success of the work products and environmental benefits.

LOCATION MAP

The location map of the water system, which is the focus of this project, is provided in Figure 1 at the beginning of this document.

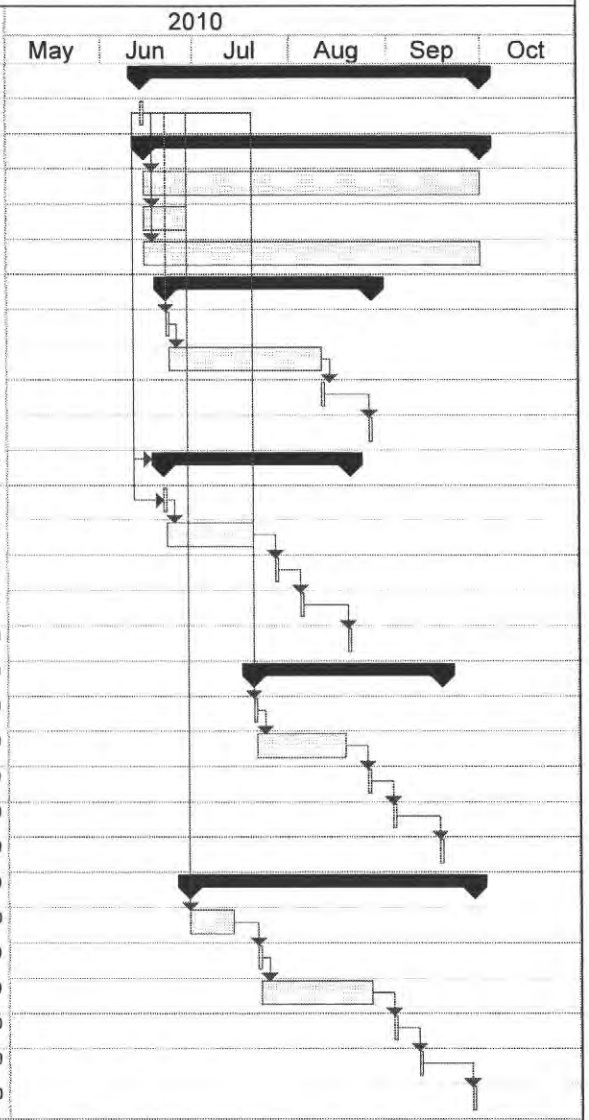
REPORTING

The project will prepare Quarterly Reports. The last Quarterly Report will serve as a Final Report. Quarterly Reports will include an executive summary of work done to date and how effective the project was in achieving the stated environmental and public health objectives. Quarterly Reports will also include any deliverable produced during the reporting quarter. Per EPA guidance, the following quarterly report schedule will be followed:

Reporting Period	Report Due Date
January 1 - March 31	April 30
April 1 - June 30	July 31
July 1 - September 30	October 31
October 1 - December 31	January 31

Carson City
Saw Mill Canyon Pipeline/Water Delivery Planning
APPENDIX A - Project Schedule

ID	Task Name	Duration	Start	Finish
1	**Carson City Saw Mill Canyon Pipeline and Water Delivery Planning**	**79 days**	**Mon 6/14/10**	**Thu 9/30/10**
2	EPA Notice to Proceed	1 day	Mon 6/14/10	Mon 6/14/10
3	**TASK 1 - PROJECT MANAGEMENT AND COORDINATION**	**78 days**	**Tue 6/15/10**	**Thu 9/30/10**
4	Task 1.1 Administration and Invoicing	78 days	Tue 6/15/10	Thu 9/30/10
5	Task 1.2 Project Procedures Manual	10 days	Tue 6/15/10	Mon 6/28/10
6	Task 1.3 Quality Assurance and Control	78 days	Tue 6/15/10	Thu 9/30/10
7	**TASK - 2 PREPARE A CE SUBMITTAL FOR PIPELINE AND TANK**	**48 days**	**Tue 6/22/10**	**Thu 8/26/10**
8	Meeting with EPA	1 day	Tue 6/22/10	Tue 6/22/10
9	CE Document Preparation	35 days	Wed 6/23/10	Tue 8/10/10
10	CE Document Submittal	1 day	Wed 8/11/10	Wed 8/11/10
11	Review Meeting with City and EPA and Approval	1 day	Thu 8/26/10	Thu 8/26/10
12	**TASK 3 - TANK METER HOUSE VALVE AND FLOW METER INVESTIGATION**	**44 days**	**Mon 6/21/10**	**Thu 8/19/10**
13	Data Review and Site Visit	1 day	Mon 6/21/10	Mon 6/21/10
14	Task 3.1Tank Meter House Valve and FM Technical Memorandum (TM1)	20 days	Tue 6/22/10	Mon 7/19/10
15	Draft TM1 Submittal	1 day	Tue 7/27/10	Tue 7/27/10
16	Review Meeting	1 day	Wed 8/4/10	Wed 8/4/10
17	Final TM1 Submittal	1 day	Thu 8/19/10	Thu 8/19/10
18	**TASK 4 - CONDITION ASSESSMENT FOR OUTLET CONTROL VALVES**	**44 days**	**Tue 7/20/10**	**Fri 9/17/10**
19	Diving Inspection	1 day	Tue 7/20/10	Tue 7/20/10
20	TM2 - Evaluation of Outlet Valves	20 days	Wed 7/21/10	Tue 8/17/10
21	Draft TM2 Submittal	1 day	Wed 8/25/10	Wed 8/25/10
22	Review Meeting	1 day	Thu 9/2/10	Thu 9/2/10
23	Final TM2 Submittal	1 day	Fri 9/17/10	Fri 9/17/10
24	**TASK 5 - FEASIBILITY FOR FLASHBOARDS INSTALLATION AT MARLETTE**	**65 days**	**Tue 6/29/10**	**Mon 9/27/10**
25	Review Background Information	10 days	Tue 6/29/10	Mon 7/12/10
26	Meeting with State Engineer	1 day	Wed 7/21/10	Wed 7/21/10
27	TM3 - Flashboards Evaluation	25 days	Thu 7/22/10	Wed 8/25/10
28	Draft TM3 Submittal	1 day	Thu 9/2/10	Thu 9/2/10
29	Review Meeting	1 day	Fri 9/10/10	Fri 9/10/10
30	Final TM3 Submittal	1 day	Mon 9/27/10	Mon 9/27/10



Project: EPA Work Plan Schedule

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

Carson City
Saw Mill Canyon Pipeline and Water Delivery Planning
APPENDIX B - Hours and Fee Estimate

Project Element & Task Descriptions	Labor Hours	Labor Cost	Expenses	Total Cost
TASK 1 - PROJECT MANAGEMENT AND COORDINATION	**166**	**$30,400**	**$1,300**	**$31,700**
Task 1.1 Administration and Invoicing	100	$16,800	$1,000	$17,800
Task 1.2 Project Procedures Manual	26	$4,100		$4,100
Task 1.3 Quality Assurance and Control	40	$9,500	$300	$9,800
TASK - 2 PREPARE A CE SUBMITTAL FOR PIPELINE AND TANK	**204**	**$37,100**	**$17,000**	**$54,100**
Coordination with Governmental Agencies	76	$14,100	$2,000	$16,100
Prepare Project Description	60	$10,800	$2,000	$12,800
Environmental Results Preparation	68	$12,200	$13,000	$25,200
TASK 3 - TANK METER HOUSE FLOW METER AND VALVE EVALUATION				
Task 3.1 - Tank Meter House Valve and Flow Meter Investigation TM	**120**	**$22,600**	**$1,500**	**$24,100**
TASK 4 - CONDITION ASSESSMENT FOR OUTLET CONTROL VALVES	**144**	**$29,000**	**$2,000**	**$31,000**
TASK 5 - FEASIBILITY FOR FLASHBOARDS INSTALLATION AT MARLETT	**118**	**$24,100**	**$2,000**	**$26,100**
TOTAL FEE	**752**	**$143,200**	**$23,800**	**$167,000**