

HRS WATER CONSULTANTS, INC.

8885 West 14th Avenue
Lakewood, CO 80215
(303) 462-1111
FAX (303) 462-3030
Email: mpalumbo@hrswater.com

Mark R. Palumbo
Principal Hydrologist

Consultants in
Water Resources
& Hydrogeology

December 23, 2021

Mr. Adam Cwiklin
Water and Wastewater Superintendent
Town of Fraser
P.O. Box 370
Fraser, CO 80442

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Delivered via email: acwiklin@town.fraser.co.us

Re: Town of Fraser Capital Improvement Plan - Agreement for Hydrogeologic and Water Supply Consulting Services

Dear Mr. Cwiklin,

In response to our phone and email correspondence, HRS Water Consultants, Inc. (“HRS”) is pleased to present this proposal and letter-agreement to perform the following scope of work (“SOW”) related to the Town of Fraser’s (“Fraser” or “Town”) capital improvement project (“CIP”). It is our understanding that Fraser wants to implement the CIP project in 2022 and that the civil engineering firm of Merrick and Company will also be on the project team. We have discussed this project with you and reviewed a preliminary project area figure that you sent to us.

This letter-agreement presents our proposed SOW, the estimated costs, and schedule. Also included as part of this letter-agreement is a copy of HRS’ 2022 rate schedule (Exhibit A) and Standard Terms and Conditions (Exhibit B).

Proposed Scope of Work

This SOW includes specific task items related to development of the hydrogeologic and water well supply components for the Fraser CIP. The overall goal of this project is to complete hydrogeologic work that will identify future Fraser north service area wellfield areas and the number of wells required to meet the anticipated north service area demand.

We have divided this project into two phases. Phase 1 will include hydrogeologic analyses of the Fraser wellfield. Pursuant to its decrees in Case Nos. CA-1175, 82CW219, and 85CW339 the Fraser wellfield has additional legal capacity. The purpose of this phase is to determine if the wellfield area has a physical capacity for the installation of additional wells. Specific project tasks are described below.

Phase 2 will include hydrogeologic analyses to investigate up to two new wellfield areas. The purpose of this phase is to potentially locate two new wellfield areas, locate the appropriate number of wells in the wellfield, and estimate the wellfield pumping rate.

Phase 1 Scope of Work

Phase 1 project work includes the following tasks.

- Wellfield Data Assembly and Review
- Wellfield Data Analysis and Preliminary Well Site Selection
- Wellfield Simulation Analyses
- Analysis Results and Conclusions
- Meetings and Coordination
- Phase 1 Report

Task 1 Wellfield Data Assembly and Review

There are currently seven operational wells in the Fraser wellfield. Two well sites, No. 3a and No. 4 are currently inactive. Fraser wellfield data will be assembled and reviewed. The data review will focus on the wellfield's aquifer parameters and wellfield characteristics of specific capacity, empirical evidence of well-to-well interference, and a semi-quantitative review of each wells' physical condition. This task will also include preparation of a wellfield location figure that will be used to identify potential additional well locations.

Task 2 Wellfield Data Analysis and Preliminary Well Site Selection

The Task 1 data will be analyzed to develop one or more preliminary Fraser wellfield well sites. The preliminary well site locations will be determined by aquifer parameters, well spacing, and the location of existing pipelines and other wellfield infrastructure. We will coordinate with the Fraser's water attorney on existing and new legal well location issues. Potential well location issues will be explained.

Task 3 Wellfield Simulation Analyses

The Task 1 data, the existing well locations, and the Task 2 well locations will be used to evaluate wellfield pumping and drawdown. The existing Fraser wells will be simulated at their equipped pumping rates. The new wells will be simulated at estimated pumping rates. If new wells are

feasible, this wellfield work will result in pumping rate and drawdown estimates for the larger wellfield.

Task 4 Analysis Results and Conclusions

This task will develop results and conclusions based on the Task 3 work. One possible result of this analysis is that the Fraser wellfield cannot accommodate additional wells. If additional wells are possible, the wells' location, anticipated depth, and anticipated pumping rate will be explained. An additional topic will include the Fraser River's effect on well pumping rate and drawdown.

Task 5 Meetings and Coordination

This task includes two project meetings and meeting preparation time. One of the meetings will take place at HRS' office or virtually and the other meeting can be in Fraser.

Task 6 Phase 1 Report

A Phase 1 draft report will be prepared for Fraser's review. After draft report comments are received a final report will be prepared and submitted.

Phase 2 Scope of Work

Phase 2 project work includes the following tasks.

- Water Supply Analysis
- Study Area Selection
- Hydrogeologic Data Review
- Hydrogeologic Analysis
- Meeting and Coordination
- Phase 2 Report

Task 1 Water Supply Analysis

In 2020 an Updated Water Plan was prepared as a collaborative effort with input from the Fraser Town Board of Trustees; the Fraser Town Staff; HRS; and the Town's water rights counsel. The Town's municipal water supply facilities includes two independent, but physically connected, systems: the "North System", which generally supplies geographic areas of the Town known as "Old Town Fraser", and the Byers Peak Properties development; and the "South System" which supplies geographic areas of the Town encompassing the Rendezvous and Grand Park developments. This SOW is for only the North System.

This task will review the North System water supply demands in the Updated Water Plan. The review will result in a preliminary determination of an estimated alluvial well pumping rate and the number of alluvial wells required to meet the anticipated North System demand at buildout.

Task 2 Study Area Selection

You have provided us with a figure which outlines a general area of investigation for this project. That area includes both Elk Creek and the Fraser River. We anticipate that Fraser River alluvial well production will be better than Elk Creek alluvial well production. We will evaluate Elk Creek alluvial well production to better inform our opinion. This scope of work includes the selection and evaluation of up to two alluvial wellfield areas. This task will require additional coordination with you to identify specific areas for evaluation. Once wellfield areas are selected, hydrogeologic information gathering for those areas will begin.

Task 3 Hydrogeologic Data Gathering and Review

We will gather, assemble, and review hydrogeologic data for up to two potential alluvial wellfield areas. This hydrogeologic data may include:

- Geologic maps
- Topographic maps
- Colorado Division of Water Resources well records
- Published hydrogeologic reports
- Hydrogeologic reports in the HRS library

The available data will be reviewed to determine the following wellfield parameters:

- Depth to bedrock
- Depth to ground water
- Saturated aquifer thickness
- Aquifer lithology
- Aquifer hydraulic conductivity and transmissivity
- Aquifer specific yield

Task 4 Hydrogeologic Analysis

The data collected in Task 3 will be analyzed to evaluate alluvial wellfield pumping rates. Depending on the available data, individual well and wellfield analyses will be performed to determine potential well pumping rates. The objectives of this task are to determine the number of wells that can be installed in the wellfield area, the well's approximate location, and the wells and wellfield production rates.

Task 5 Meetings and Coordination

This task includes two project meetings and meeting preparation time. One of the meetings will take place at HRS' office or virtually and the other meeting can be in Fraser.

Task 6 Phase 2 Report

A Phase 2 draft report will be prepared for Fraser's review. After draft report comments are received a final report will be prepared and submitted.

Estimated Project Cost

Work for this project will be performed on a time and material basis. The estimated cost for HRS to perform the proposed scope of work is \$68,010. The Phase 1 cost is \$31,880 and the Phase 2 cost is \$36,130. Rates used to calculate the costs are listed in our 2022 rate schedule (Exhibit A). Direct costs are all charges other than labor charges incurred directly for the project.

Schedule

The Scope of Work as described in this letter-agreement shall begin immediately after HRS Water Consultants, Inc. receives a signed copy of this letter-agreement or after a contract with Fraser is executed. The signed letter or contract will be our Notice to Proceed for the agreed-upon services. HRS will complete the proposed work within 150 days. Any delays beyond our control may require adjustment to this schedule. All work will be performed in accordance with HRS Water Consultants Standard Terms and Conditions (Exhibit B, attached).

If the scope of work, cost estimate, and schedule described meet with your approval, and you wish us to proceed with the work, please sign and return one copy of this letter-agreement. The undersigned agrees to the terms as written in this Letter Agreement and the attached rate schedule and Terms and Conditions.

We look forward to the opportunity to work with you on this project. Please call me if you have any questions or comments on the proposed scope of work/agreement.

Very truly yours,

HRS WATER CONSULTANTS, INC.

Mark R. Palumbo
Principal Hydrologist

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Enclosures: Rate Schedule (Exhibit A)
Terms and Conditions (Exhibit B)

Accepted by:

Signature _____

Name _____

Title _____

Date _____

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