

Sep 7, 2022

Doug Bellatty
Public Works Director
Town of Granby
P O Box 440
Eagle, CO 80446

RE: North Service Area WTP - Proposal for Preliminary Engineering Services

Dear Doug:

Thank you for the opportunity to provide the Town with this proposal to move the planning process forward for improvements for the Town's North Service Area Water Treatment Plant. We developed the scope of work described herein based on our understanding that the Town would like to begin construction of improvements in the spring of 2024 and intends to pursue grants and loans through the state (DOLA EIAF and SRF/BIL programs). The implication is that it is important to retrieve relevant site and water quality/treatment data here in 2022 before winter sets in so that the information can be utilized to make planning and design progress this coming winter. If the Town delays the work proposed herein until the spring of 2022, the planning/design and funding acquisition activities can't proceed in earnest until late spring/early summer of 2023, which would be late enough as to jeopardize achievement of the spring 2024 construction start target. Beginning construction in a spring season is a worthwhile goal – it will minimize the schedule impacts and costs associated with winter construction work by allowing treatment buildings to be "dried in" by winter 2024-25.

For the planning and design work to occur in 2023 we would propose to give the Town a conservative ballpark estimate in September and a more detailed scope/fee proposal later in the calendar year or early in 2023 once we have some of the data/results back from the work conducted under this scope. These will give the Town and SGM a better idea of what the scope of improvements to the plant will need to be, and thus, the level of effort required for final design.

PROPOSED SCOPE OF SERVICES

Phase 01 – Project Management

Objective:

Administer the scope, schedule, and budget associated with this scope of work. Provide for internal team communications and coordination with Town staff and BOT to support execution of a smooth project.

Sub-Tasks:

- Project scope, budget, schedule and accounting resources setup and contract execution.
- Monthly progress reporting on SGM activities and engineering project budget tracking and invoicing (assumes 4-month period: Sep-Dec 2022), including subcontract(s) management

- Miscellaneous communications with Town on overall project, engineering services, or other project management issues (assumes 4-month period).
- Attendance and preparation associated with one (1) Town BOT meeting to report on project progress, key findings, issues, etc. – as needed.
- Internal team communications and coordination (assumes 4-month period).

Deliverables:

- SGM progress report and budget summary with each monthly invoice.

Phase 02 – Sanitary Survey Response Assistance

Objective:

Assist in developing solutions and responses to significant deficiencies identified in July 21, 2022 CDPHE letter to the Town documenting sanitary shortcomings of existing plant. Goal is to implement solutions that significantly reduce the risks of water quality and/or service reliability degradation using simple, cost-effective improvements made in the context of a plant which will see significant improvements in the next few years.

Sub-Tasks:

- Site visits to observe/discuss significant deficiencies with plant staff
- Identify, research, and discuss potential solutions with Town
- Develop and present solution writeups for followup letter to CDPHE; coord w/Town
- Design/specify solution for cross-connect
- Design/specify solution for secondary containment for alum storage tanks
- Design/specify solution for clearwell hatch gaps
- Coord w/staff on photos of solutions and certify as-builts with CDPHE

Deliverables:

- Sanitary survey response letter contributions.
- Design information to Town staff (equipment selections, etc.) to support their implementation of solutions.
- Email to CDPHE certifying completion of improvements

Phase 03 – Site Survey & Design Basemap Development

Objective:

Develop an existing conditions basemap to support design that captures topography, property boundaries, easements/rights of way, buried utilities, structures, roads/trails/trees and other surface

features, geotechnical borehole locations, wetland boundaries, and river cross-sections (for floodway/floodplain analysis).

Sub-Tasks:

SGM will complete needed existing conditions mapping to support project planning, permitting, hydraulic/floodplain analysis and design. Key items include:

- 1' topography across area of potential designed improvements with spot elevations at key features and locations.
- All existing improvements.
- River mapping adjacent to project site and at key cross section locations (8) to support hydraulic analysis and floodway definition.
- Existing property boundaries, including Highway 40 ROW.
- Subsurface utilities, wetland boundaries, and geotechnical investigation boreholes.

All mapping to be completed on NAVD 88 vertical datum, consistent with existing FEMA floodplain mapping.

Deliverables:

- Design basemap.
- Select river cross-sections for use in hydraulic modeling.

Phase 04 – Subsurface Utilities Engineering (SUE) Investigation

Objective:

The existing site has an abundance of subsurface utilities. These include two high-pressure, large-diameter natural gas transmission lines, a natural gas distribution line, and a gas service line to the facility. Multiple lines cross candidate areas for new or expanded structures. There are a number of abandoned utilities as well. The purpose of this SUE investigation is to develop an accurate picture of the buried utilities to support planning, cost estimating, and conceptual layouts development, and ultimately, design and safe/efficient construction. The overall goal is to reduce risks and costs associated with redesign and rework and minimize construction costs by avoiding or rectifying utility conflicts.

Sub-Tasks:

SGM will provide professional SUE investigation services for this project. We will locate utilities through acquisition and review of documents from utility providers in combination with physical locating in the field through subsurface locating techniques. Physical locating will include depth of bury estimates, which are important for planning and design. It is our experience that 811 utility locations can sometimes be performed in the field using just GPS data versus pipe and cable location devices and

can routinely be inaccurate. In addition, no depth information is provided. With the abundance of utilities on this site, and the degree of site constraints and importance of keeping the existing plant operating during construction, we believe a comprehensive, well-researched subsurface utility investigation will generate benefits that more than cover its cost on this particular project.

Upon an initial review of this area we have found there to be existing utility facilities in the area related to the following: CenturyLink fiber optic and/or telephone, Comcast cable TV and/or fiber optic, Granby Sanitation District sanitary, Grand Elk Ranch & Club irrigation water utilities, Level 3 (now CenturyLink) fiber optic, MCI (AKA Verizon) fiber optic, Mountain Parks Electric Inc. electric, Town of Granby potable and raw irrigation water, Town of Granby NSA WTP yard piping, Xcel Energy electric and gas, and Xcel Energy high pressure gas. Key task items include:

- Initial Data Gathering & Data Set-up – Records Research
A Utility Notification Center of Colorado (UNCC) 811 SUE Ticket will be submitted by SGM upon approval by the client. SGM will reach out to all respective utility owners for the ASCE-38 Quality Level D related utility owner records research. An initial review of the mapping data will be incorporated in this task.
- Initial Data Gathering & Data Set-up – Field Investigation (for 2 consecutive days + 1 day contingency, if needed)
An ASCE-38 Quality Level B/C utility field investigation will be conducted in an effort to find and mark underground utility facilities, in which SGM staff will record these utility marks with ProStar PointMan (in most locations pending GPS capabilities). SGM does not anticipate the need for traffic control. An initial review of field data in the office will be incorporated in this task.

Deliverables:

- Existing utilities basemap.

Phase 05 – Geotechnical Investigation

Objective:

Develop an understanding of subsurface geotechnical conditions, soil properties, and groundwater levels to inform planning, cost estimating, site layout and facilities design. Work will consist of drilling a total of five (5) boreholes, recording subsurface stratigraphy, and analyzing soil samples for engineering properties.

Sub-Tasks:

- See **Attachment A** for a geotechnical investigation proposal from Kumar & Associates. SGM solicited Kumar, CTL Thompson, and Ground Engineering, and received two proposals – one from Kumar and one from Ground. SGM recommends engaging Kumar & Associates based on more favorable pricing, availability, and contract terms.

Deliverables:

- Geotechnical report with findings and recommendations for design/construction.

Phase 06 – Environmental Investigation

Objective:

Perform work recommended to facilitate site layout/design, support the fulfillment and scoping/budgeting of NEPA process requirements (environmental checklist and likely environmental assessment (EA)) associated with State Revolving Fund (SRF) financing, and catch any potential environmental issues early in the planning process. Completing the EA would occur in 2023 as part of the SRF loan application process and is not included in this scope.

Sub-Tasks:

SGM's Environmental Team will complete an assessment of environmental resources and considerations associated with the development plan generated by SGM's process engineering team. Our assessment will be informed by literature and desktop review, supplemented by site visits to the project area to document environmental conditions.

- Wetland Delineation & USACE Verification - We will complete a wetland delineation for the project site, including the Frasier River and adjacent tributaries/wetlands on the site. Some level of Army Corps permitting may be required due to direct impacts to waters associated with new riverbank structures or additional flood protection improvements, and we will submit a delineation report to the Army Corps for formal verification, to formalize the delineation for future permitting use.
- Field Survey – we will visit the project site and perform a comprehensive biological assessment, documenting and recording the occurrence and distribution of resources of concern. This includes, but is not necessarily limited to: wildlife habitat, soils, noxious weeds, migratory birds and eagles, hazardous wastes, and vegetation. GIS mapping and photo documentation of relevant findings will be compiled to inform our environmental impact assessment. Emphasis will be on items with the potential to impact the design or timeline of the project's development, particularly special status wildlife species and habitats.
- Cultural & Historic Resources - a Class III survey and cultural resource assessment will be completed for the project site by our licensed subcontractor. All reporting necessary to secure State Historical Preservation Office (SHPO) approval of the project is included, and a summary of findings (if any) will be provided to inform the alternatives and preliminary design phases of the project. The requirement for a cultural resources assessment would arise from the use of state and federal funding, which we understand the Town is planning to pursue. SGM does not expect there to be resources of cultural/historical significance at the site, but the survey is needed, and sometimes historic water supply ditches qualify for historic preservation.

Deliverables:

- Environmental and cultural resources reports
- Wetlands delineation (to be included on design basemap)
- Wetland delineation verification submittal to USACE

Phase 07 – Water Quality & Treatment Testing

Objective:

Improve the knowledge of raw/treated water quality and existing or potential future treatment process performance enough to support sound treatment process alternatives evaluation, selection and design. Results of this work will likely support treatment equipment/systems (such as membrane filtration) procurement. Results may also identify the need for additional water quality monitoring or treatment testing before final process decisions can be made.

Sub-Tasks:

The original plant was designed to support the potassium permanganate storage and feed to oxidize raw water dissolved iron and manganese and allow the resulting precipitates to be removed in sedimentation and filtration. The plant O&M manual also makes note of the permanganate feed being used to develop a manganese oxide coating on the filter sand to catalyze the reaction of dissolved manganese at the media surface. It also notes that potassium permanganate may help with algae taste and odor reduction (though SGM notes that permanganate often does only a little in this regard since it is not strong enough an oxidant to destroy MIB, geosmin and other algae-related taste/odor compounds). When SGM visited the plant in the early 2000s, potassium permanganate was still being fed by the operator. By the time of the 2010 Water Master Plan writing, that practice had discontinued. It is possible that low levels of dissolved manganese (0.010 to 0.020 mg/L) could be present and not showing up in consumers' tap water, but causing a buildup on water mains that could eventually cause objectionable black/brown particles. It is important that the levels of dissolved iron and manganese be well characterized at this point.

The same is true for powdered activated carbon (PAC). The plant was designed with facilities to store and feed PAC for taste/odor control. This was practiced through the early 2000s but had ceased by 2010. The Edgewater development's ponds on the north side of the river with a discharge just upstream of the Highway 40 bridge and the Town's WTP intake may serve as a source of algal mass and related objectionable tastes/odors. Now is a good time to try to characterize the presence of these and determine if the Town wants to pursue associated treatment process testing, evaluation and design activities.

With the Fraser River watershed being subjected to high levels of trans-basin diversion and increasing urbanization and sanitary wastewater discharges upstream of Granby, it is worthwhile to understand what levels of “emerging contaminants” that may be present in the Town’s raw and treated water. Such emerging contaminants include PFAS, algal toxins, and nitrosamines (a class of nitrogen-containing disinfection byproducts).

If the current pretreatment process is to be kept online for future use, it is important that the Town understand how well it can perform. This entails optimizing chemical selection and application, among other actions. In addition, if polymeric membranes are to be considered, pretreatment performance without polymer (a membrane foulant) will need to be assessed. The proposed work includes jar tests aimed at identifying, for the late summer/fall season (raw water quality and optimal treatment conditions will likely be different in the winter, spring, and possibly mid-summer seasons), optimal chemical applications of coagulant, polymer, acid/base, soda ash, permanganate, etc.

This scope and does not include treatment testing for taste and odor or emerging contaminants removal. This is very expensive and a recommended first step is simply to characterize the presence/absence of these contaminants. Decisions about pursuing treatment testing and evaluation and design of processes can be made with a fuller understanding of their occurrence and associated implications.

Sub-tasks of Phase 07 include:

- Coord w/Town on historical WQ and plant ops data and review it
- Develop Supplemental WQ Monitoring Plan; coord w/lab(s)/Town on costs/schedule
 - See **Attachment B** for preliminary version with analytical cost estimate
- Provide analyzer and train Town staff on in-house UV absorbance testing
- Coord w/Town during 2022 monitoring and review/log results in spreadsheet
- Develop bench-scale (jar) testing plan (and review w/Town)
- Coordinate/prepare for jar testing
- Perform jar testing and get samples off to lab for analysis
- Acquire/process lab results
- Prepare technical memo with results, interpretation, and implications for design/operations and/or additional recommended water quality monitoring and treatment testing

Deliverables:

- Supplemental Water Quality Monitoring Plan
- Jar Testing Plan
- Technical Memorandum on WQ monitoring and jar testing results

Phase 08 – Floodplain Evaluation

Objective:

Quantify flood elevations at the site and characterize flooding risks in order to identify any recommended, or necessary, improvements to mitigate such risks. Ensure compliance with, and be able to certify with a State of Colorado Professional Engineer's stamp that the design will meet, CDPHE, CWCB and Town flood protection regulations. Flood hazards to potable water infrastructure are on the rise with climate change, and we want to be certain that the Town reliably can provide potable water to North Service Area customers in the decades to come.

Sub-Tasks:

- Preparation - review previous studies, available mapping, determine gameplan and needed survey and additional modeling work
- Coordination and meetings – on floodplain matters over project duration
- Existing Conditions HEC-RAS Model
 - Acquire and test run FEMA effective HEC-RAS model
 - Add new cross sections from survey to extend reach below ped bridge
 - Input hydrologic and hydraulic modeling parameters for each cross section
 - Run, troubleshoot and revise model to produce final results
- Floodplain Report and Mapping
 - Technical report summarizing survey and modeling work
 - Exhibit showing 100-yr floodplain with watersurface elevations
 - Floodplain Development Permit

Phase 09 – Preliminary Engineering

Objective:

Move evaluation and decision processes forward relative to treatment process improvements, site/building layouts, and costs estimates so that permitting, funding/financing acquisition, equipment pre-procurement and detailed design activities can proceed expeditiously in 2023 to support a spring 2024 construction start target.

Sub-Tasks:

- Make site visits and discuss existing facility design/ops w/staff
- Acquire/review existing drawings, O&M Manuals, reports, etc for existing facility
- Make site visits and discuss existing facility design/ops w/staff
- Compile/evaluate existing design criteria and performance
- Identify current/future WQ issues/goals, residuals requirements & discuss w/Town
- Develop trtmnt process & residuals options w/concept layouts. Coord w/equip mfgrs
- Evaluate options: pros/cons; costs and meet w/Town to discuss & ID preferred
- Develop tech. memo on options analysis and concept for preferred alternative

Deliverables:

- Technical memo documenting alternatives evaluation and associated decisions/recommendations
- Planning-level capital cost opinion for preferred option.

Phase 10 – Funding Acquisition Support

Objective:

Characterize opportunities, timelines, requirements and implications of grant and loan assistance through the State Drinking Water Revolving Fund (as supplemented by the Bipartisan Infrastructure Law) and State Department of Local Affairs (DOLA) Energy and Mineral Impact Assistance Fund (EIAF).

Sub-Tasks:

- SRF/BIL - Review the process & discuss with State's PM and Town
- SRF/BIL - Assist with completion of Pre-Qual Form and Attend PreQual Meeting
- DOLA EIAF - Review the process & discuss with State's PM and Town

Deliverables:

- None – assist with Town preparation and submission of SRF pre-qualification form

PROPOSED SCHEDULE

It is critical that work related to the following items be completed by the noted times:

- Water quality monitoring for taste/odor compounds, UV-254 and organic carbon by October 15
- Jar testing by October 15
- Wetlands delineation by October 15
- Subsurface utilities investigation and site survey by November 1.

We will target having all work completed by December 31, assuming authorization to proceed occurs by September 15, 2022.

PROPOSED FEE

We have estimated fees for the above-noted scope at **\$141,472**. This estimate is based on our 2022 Fee Schedule (attached) with a 10% discount for Town of Granby work. The table below presents a breakdown by the phases presented above. **Attachment C** contains the work breakdown structure at the individual labor category and sub-task level. Our fee estimate includes costs associated with the work of our subconsultants (geotechnical engineering and cultural resources consultants); it excludes water quality sample analysis costs (commercial lab fees).

We propose to invoice the Town for this project on a time and materials basis.

Fee Estimate Summary					
Phase	Phase Description	SGM Labor	Subs	Expenses	Total
01	Project Management	\$9,025	\$0	\$138	\$9,163
02	Sanitary Survey Assistance	\$6,047	\$0	\$275	\$6,322
03	Site Survey & Basemap Dev.	\$12,492	\$0	\$966	\$13,458
04	Subsurface Utilities Investigation	\$10,156	\$0	\$1,527	\$11,683
05	Geotechnical Investigation	\$3,462	\$7,370	\$138	\$10,970
06	Environmental Investigation	\$9,004	\$6,000	\$775	\$15,779
07	Water Quality & Treatment Testing*	\$27,659	\$0	\$438	\$28,096
08	Floodplain Evaluation	\$12,740	\$0	\$0	\$12,740
09	Preliminary Engineering	\$30,656	\$0	\$138	\$30,793
10	Funding Acquisition Support	\$2,469	\$0	\$0	\$2,469
Total		\$123,710	\$13,370	\$4,393	\$141,472

* In addition to the costs listed herein, we estimate the Town would spend an additional roughly \$10,000 in water quality analytical and sample shipping costs in 2022 (see **Attachment B**).

Please contact me with any questions and/or sign below to authorize the scope and budget described above. Thank you.

Sincerely,

SGM



Warren Swanson, PE
 Project Manager
 970-384-9051, warrens@sgm-inc.com

Attachments:

- A – Geotechnical investigation proposal from Kumar & Associates
- B – Proposed Supplemental Water Quality Monitoring Program
- C – Fee Estimate Breakdown by Subtask and Labor Category
- D – SGM 2022 Fee Schedule – hourly rates to be discounted 10% for Town of Granby

Proposal Accepted by

TOWN OF GRANBY

Signed: _____

Date: _____

Name (printed): _____

Title: _____

ATTACHMENT A

Kumar & Associates Geotechnical Investigation Scope and Fee Proposal

An Employee Owned Company

Office Locations: Denver (HQ), Parker, Colorado Springs, Fort Collins, Glenwood Springs, and Summit County, Colorado

August 26, 2022

SGM, Inc.
Attn: Warren Swanson, P.E.
118 West 6th Street, Suite 200
Glenwood Springs, Colorado 81601

warrens@sgm-inc.com

Proposal No. P6-22-267

Subject: Proposal for Geotechnical Engineering Study, Proposed Town of Granby North Service Area Water Treatment Plan Expansion, Granby, Colorado.

Dear Warren:

Kumar & Associates, Inc. (K+A) is pleased to submit this proposal to conduct a Geotechnical Engineering Study for the subject project.

Project Info: We understand the project will consist of the expansion of the existing water treatment facility. The expansion will include a new water treatment building, and additions to existing buildings. Foundation loads are assumed to be relatively light to moderate and typical of the proposed construction.

Scope of Work: The scope of work is presented below and is intended to meet the standard of care for studies of these types in this area. Based on the information provided, we propose the following:

1. Drill five exploratory borings at the project site, as access and underground utilities allow, generally as shown on the attached boring location plan, Fig. 1. The borings are anticipated to range from 15 to 30 feet deep, or until refusal. The final depth of the borings will be determined in the field as drilling progresses and as the subsurface profile becomes evident. The borings will be made to obtain information on the subsurface profile, to obtain samples for laboratory testing, and to estimate the groundwater level and depth to bedrock, if encountered within the drilled depth.
2. PVC piezometers will be installed in two of the borings to monitor groundwater levels. Groundwater levels will be measured at the time of drilling and monitoring can be performed on future visits on a time and materials basis as additional scope.

We will coordinate with the Utility Notification Center of Colorado to locate buried utilities prior to drilling. Utilities cleared through this service will not include privately owned on-site utility lines. The property owner should review the proposed boring locations once they are staked in the field and verify that borings are clear of privately-owned underground utilities.

2. Conduct a laboratory testing program on selected samples obtained from the borings to determine:
 - Moisture content and density of undisturbed fine-grained samples
 - Gradation characteristics of coarse-grained samples
 - Consolidation and/or swell potential (of fine-grained soil samples)
 - Atterberg limits
 - Water soluble sulfates, pH and laboratory soil resistivity

3. Analyze the data obtained from the field and laboratory portions of the study to provide engineering recommendations for:
 - Foundation type or types, depths and allowable bearing pressures
 - Axial and lateral design criteria for deep foundations, if warranted
 - Lateral earth pressures for basement and retaining walls
 - Floor slabs on grade
 - Exterior flatwork recommendations
 - Surface drainage
 - Underdrain system
 - Utility backfill recommendations
 - Wall backfill soil type and degree of compaction
 - Foundation construction criteria
 - Pavement design
 - Seismic site class (estimated from boring data)

4. Prepare a report summarizing the site exploration data and laboratory test results and providing our conclusions and recommendations. The field work and report preparation will be supervised by a registered professional engineer.

Fees: Our fee for the Scope of Work will be a lump sum of **\$5,700**.

We will not exceed the fee above without prior authorization. Weather or other unforeseen circumstances beyond our control could alter the estimated fee. The CLIENT will be apprised of any potential fee estimate changed prior to commencement of work. Please note the following items that were considered in our fee estimate

- We assume legal access to the project site will be provided by the Client.
- We assume the boring locations can be cleared of utility conflicts by the public 811 utility location service. The services of a private utility location services are outside the scope of this proposal. If needed, you will be informed and provided with a cost estimate for the services of a private utility location service.
- Seismic site class will be estimated based on data from the exploratory borings. A 100 foot boring, or geophysical testing to determine a subsurface shear wave velocity profile are outside the scope of this proposal.
- Additional requested services will be billed in accordance with the attached fee schedule.

Schedule: We anticipate that field exploration will be completed within about two to three weeks of notice to proceed, pending drilling subcontractor availability. A final report is anticipated to be completed about three to four weeks after the field exploration. Specific times may vary somewhat if weather or other conditions beyond our control delay field exploration activities. In any event, we will coordinate with you to expedite our work to fit into your schedule and will notify you of our progress and any available information.

Professional Services: K+A agrees to perform the above outlined services. The CLIENT may subsequently amend the scope of services with the concurrence of K+A. Services provided by K+A will be consistent with the engineering standards prevailing at the time and in the area that the work is performed; no other warranty, express or implied, is intended. CLIENT is responsible to provide the information known to exist regarding the project as it applies to the execution of K+A's work.

Terms and Conditions: Attached are our normal terms and conditions for performing professional work. Please note there is a limitation of liability clause included.

Termination: This agreement may be terminated by either party upon reasonable written notice. All work will be stopped, and fees will be calculated to include all work done and materials used or ordered.

Acceptance: If this agreement is acceptable, please sign and return it to us. If it is not returned before work commences, we assume that you accept the agreement terms.

If you have any questions or require any additional information concerning our proposed scope of work, please call our office at 970-468-1989.

Respectfully submitted,
KUMAR AND ASSOCIATES, INC.



James A. Parker, P.G., P.E.

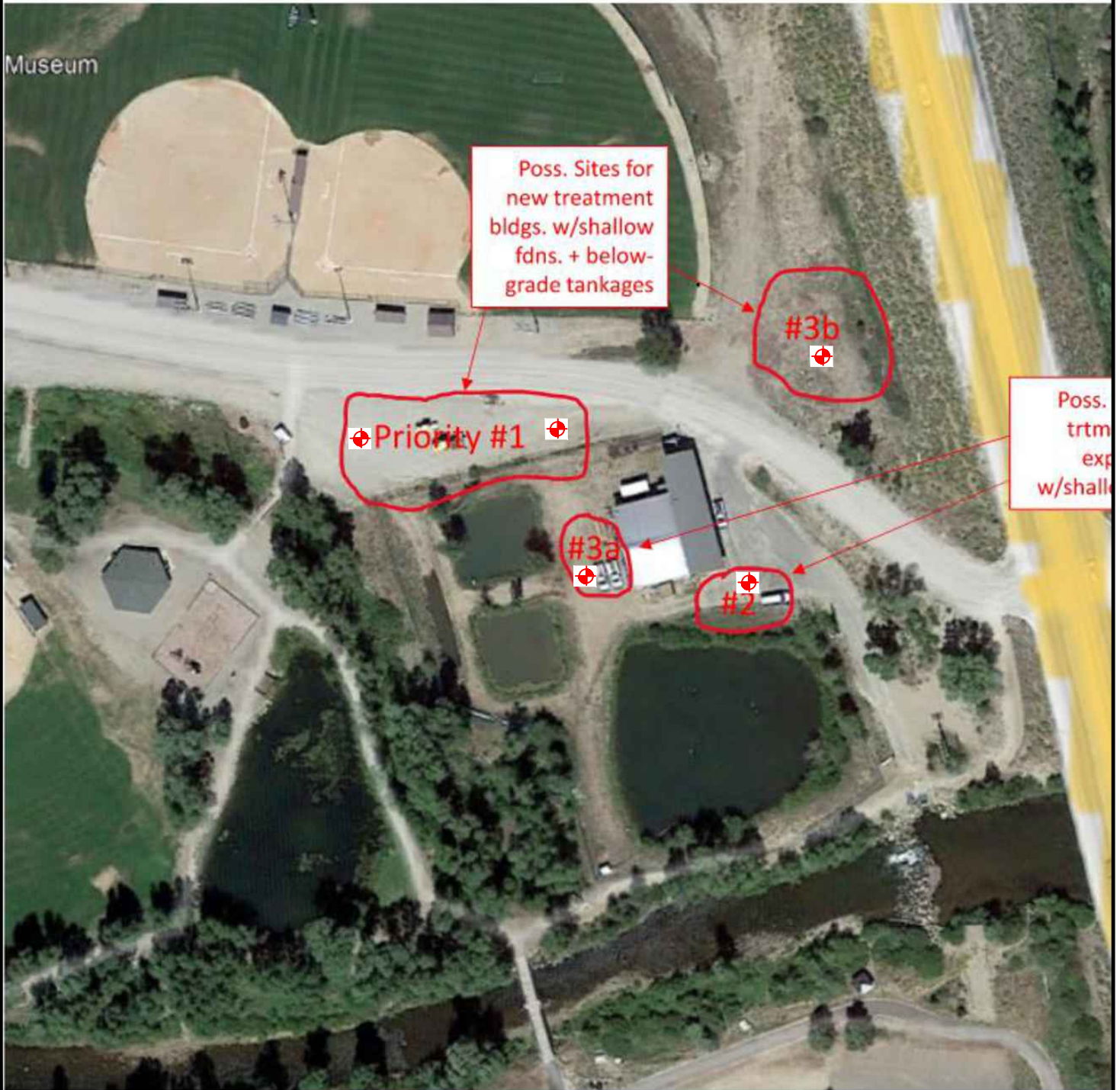
Agreed to this _____ day of _____, 2022

Organization

By _____
Signature Printed Name

Attachments: Fig. 1 - Proposed Exploratory Boring Locations
Terms and Conditions
Professional Services Fee Schedule

ATTACHMENT 1 - SITE PLAN



 Proposed Exploratory Boring Location

TERMS AND CONDITIONS
(Geotechnical and Environmental Engineering)

1. Invoices are due and payable upon presentation. Unpaid balance after 30 days shall be subject to a finance rate of 1.5% per month which is an annual rate of 18.00%. Client agrees to pay interest and all costs of collection, including attorney's fees and court costs.
2. Kumar & Associates, Inc. (K+A)'s services will be performed with the care and skill ordinarily exercised by members of the geotechnical engineering profession under the same or similar circumstances, including the locality where services were rendered. NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE BY THE RENDERING OF CONSULTING SERVICES.
3. Inherent in K+A's dealings with clients is the confidentiality of all work performed for any client. All reports are prepared for the exclusive use of the Client to whom it is addressed. This agreement may not be assigned without the express written consent of K+A.
4. All recommendations and conclusions provided by K+A are subject to the adequacy and representative character of the samples tested as indicated in the report and the comprehensiveness of the tests and observations. Quotation from our reports or use of K+A's name is not permitted except as authorized in writing by K+A.
5. K+A will take normal precautions during site exploration to avoid damage to underground pipes, wires or other objects, including utilizing utility location services. Due to limitations on locating such underground objects, particularly private service utilities, K+A does not accept responsibility for damage to utilities or other underground objects. Client agrees to indemnify and hold K+A harmless for any and all damage to underground utilities and structures. Cost of restoration, repairs or damage which results from field operations will be the client's responsibility.
6. This agreement may be terminated by either party upon ten (10) days written notice in the event of substantial failure to perform in accordance with the terms of this Agreement by the other party through no fault of the termination party. If this agreement is terminated during the performance of services, K+A shall be paid for the total amount of any work which has been completed, and shall be paid for work in progress on the basis of K+A's reasonable estimate of the portion completed prior to termination. Such payment shall constitute total payment for services rendered. Clauses 1, 2, 3 and 8 through 14 shall survive the termination of contract.
7. Unless otherwise stated, K+A will have access to the site for activities necessary for the performance of the services. K+A will take precautions to minimize damage due to these activities, but have not included in the fee the cost of restoration of any resulting damage.
8. Any claims or disputes made during design, construction or post-construction between the Client and K+A shall be submitted to non-binding mediation for a period of 30 days. If the disputes are not resolved in 30 days, the matter may be submitted to arbitration or litigated in the court of law, as solely determined by K+A.
9. The Client, shall, to the fullest extent permitted by law, indemnify and hold harmless K+A's officers, directors, owners, employees, agents and subconsultant's from and against all damage, liability and cost, including reasonable attorney's fees and defense costs arising out of or in any way connected with the performance by any of the parties above named of the services under this agreement, except only those damages, liabilities or costs attributable to the sole negligence or willful misconduct of K+A.
10. Client agrees that its sole remedy for negligence, breach of contract or any other claim arising out of or related to this agreement and/or the project shall be against K+A and not against any individuals past or present employees, officers, representatives, shareholders or owners of K+A.
11. K+A shall not be required to execute any documentation that would result in its certifying, guaranteeing or warranting the existence of conditions whose existence K+A has not ascertained.
12. **In recognition of the relative risks, rewards and benefits of the project to both the client and K+A, the risks have been allocated such that the Client agrees that, to the fullest extent permitted by law, K+A's liability, and the liability of its past and present officers, and employees, to the Client for any and all injuries, claims, losses, expenses, damages or claim expenses arising out of or relating to this agreement from any cause or causes, shall not exceed \$25,000 or K+A's fee, whichever is greater. Such causes include, but are not limited to K+A's negligence, errors, omissions, strict liability, breach of contract or breach of warranty. If, prior to signing this contract, Client makes a written request to increase this limitation to \$100,000, an additional charge of \$1,000 or 5% of the fee (whichever is greater) will be made. This limitation of liability shall apply to and be binding upon any other party who may rely on K+A's work pursuant to this agreement.**
13. All documents produced by K+A under this agreement shall remain the property of K+A, and may not be used by the Client for any other endeavor without the written consent of K+A.
14. For geotechnical studies and observations and materials testing, K+A assumes there are no hazardous materials on the project site. Hazardous materials may exist at a site where there is no reason to believe they could or should be present. Therefore, K+A and Client agree that the discovery of unanticipated hazardous materials constitutes a changed condition mandating a renegotiation of the scope of work or termination of services. K+A and Client also agree that the discovery of unanticipated hazardous materials may make it necessary for K+A to take immediate measures to protect public health and safety, which shall entitle K+A to reasonable additional compensation by Client. Client also recognizes there is a risk that sampling through an unknown contaminated zone may result in spread of contamination both on and off-site. Client waives all claims against K+A arising from such contamination, and further agrees to defend, indemnify and save K+A harmless from any claim, liability, or injury or loss of any type arising from unanticipated hazardous materials on site.
15. Rates are subject to change **30 days** from proposal date.
16. Laboratory services are considered expedited when new testing is assigned a higher priority than other testing programs in progress.



Office Locations: Denver (HQ), Parker, Colorado Springs, Fort Collins, Glenwood Springs and Summit County, Colorado

**SILVERTHORNE OFFICE
 FEE SCHEDULE
 PROFESSIONAL SERVICES**

FIELD EXPLORATION

Truck-mounted drill rig	
CME-45B	\$170/hour
Mobilization	\$4.00/mile
All-terrain drill rig	Cost + 20%
Crew travel.....	\$80/man/hour
Special equipment (backhoe, drill bits, well supplies, etc.).....	Cost + 20%
Field Engineer or Geologist.....	\$90/hour
Overtime (over 8 hours/day, Saturday, Sunday and Holidays).....	1.5 x hourly rate

LABORATORY TESTING

Fee schedule available on request.

CONSTRUCTION OBSERVATION AND MATERIALS TESTING

Fee schedule available on request.

ENGINEERING

(Includes project planning, administration, analysis, consultation, report preparation, field and travel time. Expert witness service has a 50% premium hourly rate.)

Principal	\$200/hour
Senior Project Manager	\$170/hour
Project Manager	\$140/hour
Senior Project Engineer/Geologist	\$120/hour
Project Engineer/Geologist.....	\$115/hour
Staff Engineer/Geologist.....	\$90/hour
CAD/Drafting	\$80/hour
Word Processing	\$58/hour

OTHER DIRECT CHARGES

Auto or pickup mileage	\$.70/mile
Out of town living expenses, equipment rental, supplies, etc.	Cost + 20%

REMARKS

Late fee of \$30.00 or 1.5% per month (whichever is the greater) charged 30 days from invoice date plus collection costs, bank charges and reasonable attorney's fees. Up to 3 copies of report provided for each project. Minimum 2-hour trip charge per day for field engineer or technician.

ATTACHMENT B

Proposed Supplemental Water Quality Monitoring Program

Town of Granby NSA WTP

Proposed Supplemental Water Quality Monitoring Plan

last revised: 09/07/2022

For 2/month sampling, try to sample during one "normal" raw water quality condition and one poorer raw water quality condition

Parameter	Sampling Location(s)	Frequency	Est. Analytical Costs		Notes
			per Sample	total in 2022	
<u>Pretreatment Process Performance-Related Parameters</u>					
Total organic carbon (TOC)	River, Raw, Finished	2/month	\$ 37	\$ 592	One set of Raw & Finished samples is covered by the monthly DBP Rule compliance sampling; so, add one additional monthly set at RW & FW + 2 sets at River
Dissolved org. carbon (DOC)	River, Raw, Finished	2/month	\$ 37	\$ 888	Split samples with TOC
UV-254	River, Raw, Filtered (prior to Cl2)	2/month	In-house	\$ -	Split samples with DOC
Total Alkalinity	River, Raw, Finished	2/month	\$ 16	\$ 384	Split samples with DOC
pH	River, Raw, Flocculation, Finished	2/month	In-house		Split samples with DOC
Temperature	River, Raw, Finished	2/month	In-house		Split samples with DOC
Aluminum	Finished	2/month	\$ 16	\$ 128	Split samples with DOC
Turbidity	River, Raw	2/month	In-house		Split samples with TSS; sample esp. during high turbidity excursions
Total suspended solids	River, Raw	2/month	\$ 16	\$ 256	Split samples with turbidity; sample esp. during high turbidity excursions
Turbidity	Raw, Filter Influent (ea. train)	1/day	In-house		
<u>Nuisance Minerals- Process Performance-Related Parameters</u>					
Total manganese	River, Raw, Finished	2/month	\$ 16	\$ 384	If high levels, add Backwash Pond recycle stream (to Presed Pond); if very low levels, go to 1/month after Nov. 2022
Dissolved manganese	River, Raw, Finished	2/month	\$ 16	\$ 384	If high levels, add Backwash Pond recycle stream (to Presed Pond); if very low levels, go to 1/month after Nov. 2023
Total iron	River, Raw, Finished	2/month	\$ 13	\$ 312	If high levels, add Backwash Pond recycle stream (to Presed Pond); if very low levels, go to 1/month after Nov. 2024
Dissolved iron	River, Raw, Finished	2/month	\$ 13	\$ 312	If high levels, add Backwash Pond recycle stream (to Presed Pond); if very low levels, go to 1/month after Nov. 2025
<u>Taste/Odor and Algae-Related Parameters (effect aesthetics and filtration process)</u>					
MIB & Geosmin	River, Raw, Finished	1/mon., twice	\$ 210	\$ 1,260	Sample when perceived algae and/or musty/earthy odor levels are higher than normal; do Sep.+Oct., then re-evaluate
Threshold Odor Number	River, Raw, Finished	1/mon., twice	\$ 30	\$ 180	Sample when perceived algae and/or musty/earthy odor levels are higher than normal; do Sep.+Oct., then re-evaluate
Algal Cell Count (cells/ml)	River, Raw, Clarifier Effluent	1/mon., twice	\$ 270	\$ 1,620	Sample when perceived algae and/or musty/earthy odor levels are higher than normal; do Sep.+Oct., then re-evaluate
Algae Identification	River, Raw	1/mon., twice	\$ 195	\$ 780	Sample when perceived algae and/or musty/earthy odor levels are higher than normal; do Sep.+Oct., then re-evaluate
Chlorophyll A (mg/m ³)	River, Raw, Finished	1/mon., twice	\$ 65	\$ 390	Sample when perceived algae and/or musty/earthy odor levels are higher than normal; do Sep.+Oct., then re-evaluate
<u>Corrosion-Related Parameters</u>					
Chloride	Raw, Finished	1/month	\$ 18	\$ 144	To ensure any proposed coagulant changes to help particle/organics removal don't create increased Pb/Cu release po
Sulfate	Raw, Finished	1/month	\$ 18	\$ 144	To ensure any proposed coagulant changes to help particle/organics removal don't create increased Pb/Cu release po
Calcium	Finished	1/month	\$ 13	\$ 104	To ensure any proposed coagulant changes to help particle/organics removal don't create increased Pb/Cu release po
Hardness	Finished	1/month	\$ 13	\$ 104	To ensure any proposed coagulant changes to help particle/organics removal don't create increased Pb/Cu release po
<u>Emerging Contaminants</u>					
Nitrosamines	Finished	Once	\$ 310	\$ 310	
PFAS	Raw	Once	\$ 600	\$ 600	
Algal Toxins	Raw	Once	\$ 400	\$ 400	
Estimated Total Analytical Cost in 2022:			\$	9,676	

ATTACHMENT C

Fee Estimate Breakdown

Phase	Task	Item Description	Quality Control	Project Manager	Lead Project Engineer	Process Engineer	Lead Civil Engineer	Civil Engineer	SUE Mgr.	SUE Tech.	Structural Engineer	Environmental Specialist	Environmental Specialist	CADD Tech	Land Surveyor	Survey Technician	Field Survey 2-Man Crew	Admin	LABOR HOURS	Labor Cost	Reimbursables	TOTAL FEES
		Unadjusted Billing Rate-->	C. Paulson	W. Swanson	J. Kattnig	Kristen B	D. Kotz	Varies	Karl S.	T. Matson	J. Partch	A. Nees	R. Kattnig	G. Fiedler	Varies	Varies	Varies	Varies				
		10% Discounted Billing Rate for Town of Granby-->	\$174	\$211	\$153	\$102	\$211	\$140	\$141	\$127	\$114	\$146	\$126	\$109	\$140	\$100	\$212	\$78				
01		Project Management																				
	1.1	Setup internal project accounting, tracking and mgmt resources		2															2	\$380		\$380
	1.2	Monthly progress reporting and invoicing; subcontracts management		14															14	\$2,659		\$2,659
	1.3	Miscellaneous communications/coordination with Town staff		6															6	\$1,139		\$1,139
	1.4	Internal team communications/coordination		12			2		2		1				2				19	\$3,328		\$3,328
	1.5	Allowance for one Board of Trustees meeting attendance/prep if needed		8															8	\$1,519	\$138	\$1,657
		Task Totals		42			2		2		1				2			49	\$9,025	\$138	\$9,163	
02		Sanitary Survey Response																				
	2.1	Review State's SS letter to Town; discuss potential solutions with CDPHE		3															3	\$570		\$570
	2.2	Site visits to observe/discuss significant deficiencies with plant staff		3	2	3													8	\$1,121	\$275	\$1,396
	2.3	Identify, research, and discuss potential solutions with Town staff		4		4													8	\$1,127		\$1,127
	2.4	Develop and present solution writeups for followup letter to CDPHE; coord w/Town		3		1													4	\$662		\$662
	2.5	Design/specify solution for cross-connect		4		8													12	\$1,494		\$1,494
	2.6	Design/specify solution for secondary containment for alum storage tanks		1		3													4	\$465		\$465
	2.7	Design/specify solution for clearwell hatch gaps								2									2	\$328		\$328
	2.8	Coord w/staff on photos of solutions and certify as-builts with CDPHE		1		1													2	\$282		\$282
		Task Totals		19	2	20				2								43	\$6,047	\$275	\$6,322	
03		Site Survey & Design Basemap																				
	3.1	Coordination, preparation, quality control													10				10	\$1,260		\$1,260
	3.2	Fieldwork															40		40	\$7,632	\$966	\$8,598
	3.3	Drafting														40			40	\$3,600		\$3,600
		Task Totals												10	40	40		90	\$12,492	966	\$13,458	
04		Subsurface Utilities Investigation																				
	4.1	Records research and Initial data gathering/setup							8	4									12	\$1,472		\$1,472
	4.2	Field investigation (2 days + 1 day contingency)							28	28									56	\$6,754	\$1,527	\$8,281
	4.2	Process field data and include in existing conditions drawings							8	8									16	\$1,930		\$1,930
		Task Totals							44	40								84	\$10,156	\$1,527	\$11,683	
05		Geotechnical Investigation																				
	5.1	Acquire/review geotech proposals and select/subcontract geotech firm		3															3	\$570		\$570
	5.2	Coordinate on scope and timing of field work; coord w/geotech, as needed		2															2	\$380		\$380
	5.3	Perform field work & write report (Subconsultant - Kumar & Associates)																	0	\$0	\$7,370	\$7,370
	5.4	Survey-in borehole locations in field and add to existing conditions mapping														1	7		8	\$1,426	\$138	\$1,563
	5.5	Review report and discuss findings and design/construction implications, as needed		2			2			2									6	\$1,087		\$1,087
		Task Totals		7			2			2					1	7		19	\$3,462	\$7,508	\$10,970	
06		Environmental Investigation																				
	6.1	Field survey and Environmental Resource report (critical issues assessment)											32						32	\$3,629	\$217	\$3,845
	6.2	Wetland Delineation & USACE Verification										32	8						40	\$5,112	\$559	\$5,671
	6.3	Cultural Survey & SHPO Consultation - Subconsultant										2							2	\$263	\$6,000	\$6,263
		Task Totals										34	40					74	\$9,004	\$6,775	\$15,779	
07		Water Quality & Treatment Testing																				
	7.1	Coord w/Town on historical WQ and plant ops data and review it		3		3													6	\$845		\$845
	7.2	Develop Supplemental WQ Monitoring Plan; coord w/lab(s)/Town on costs/schedule		4		3													7	\$1,035		\$1,035
	7.3	Provide analyzer and train Town staff on in-house UV absorbance testing		2		1													3	\$472		\$472
	7.4	Coord w/Town during 2022 monitoring and review/log results in spreadsheet		4		12													16	\$1,861		\$1,861
	7.5	Develop bench-scale (jar) testing plan (and review w/Town)		20	4	2													26	\$4,532		\$4,532
	7.6	Coordinate/prepare for jar testing		2	4	8													14	\$1,665		\$1,665
	7.7	Perform jar testing and get samples off to lab for analysis		4	32	40													76	\$8,838	\$438	\$9,276
	7.8	Acquire/process lab results		1	2	6													9	\$1,016		\$1,016
	7.9	Prepare technical memo on results and design/operational implications		8	32	16													56	\$7,394		\$7,394
		Task Totals		48	74	91												213	\$27,659	\$438	\$28,096	
08		Floodplain Evaluation																				
	8.1	Project Prep -Review previous studies, available mapping, determine gameplan					6												6	\$1,139		\$1,139
	8.2	Team Coordination and Meetings (Floodplain matters over project duration)					10	6						3					19	\$2,982		\$2,982
	8.3	Existing Conditions HEC-RAS Model					6	32						3					41	\$5,498		\$5,498
	8.4	Floodplain Report and Mapping					4	12						2					18	\$2,489		\$2,489
	8.5	Floodplain Development Permit					2	2											4	\$632		\$632
		Task Totals					28	52						8				88	\$12,740		\$12,740	
09		Preliminary Engineering																				
	9.1	Make site visits and discuss existing facility design/ops w/staff		12	8	8													28	\$4,115	\$138	\$4,252
	9.2	Acquire/review existing drawings, O&M Manuals, reports, etc for existing facility		6															6	\$1,139		\$1,139
	9.3	Compile/evaluate existing design criteria and performance		4		8													12	\$1,494		\$1,494
	9.4	Identify current/future WQ issues/goals, residuals requirements & discuss w/Town		6		3													9	\$1,415		\$1,415
	9.5	Develop trmnt process & residuals options w/concept layouts. Coord w/equip m	1	8	32	32													73	\$9,038		\$9,038
	9.6	Evaluate options: pros/cons; costs and meet w/Town to discuss & ID preferred	2	6	20	8													36	\$4,977		\$4,977
	9.7	Develop tech. memo on options analysis and concept for preferred alternative	2	8	40	12													62	\$8,478		\$8,478
		Task Totals	5	50	100	71												226	\$30,656	\$138	\$30,793	

Phase	Task	Item Description	Quality Control	Project Manager	Lead Project Engineer	Process Engineer	Lead Civil Engineer	Civil Engineer	SUE Mgr.	SUE Tech.	Structural Engineer	Environmental Specialist	Environmental Specialist	CADD Tech	Land Surveyor	Survey Technician	Field Survey 2-Man Crew	Admin	LABOR HOURS	Labor Cost	Reimbursables	TOTAL FEES
			<i>C. Paulson</i>	<i>W. Swanson</i>	<i>J. Kattnig</i>	<i>Kristen B</i>	<i>D. Kotz</i>	<i>Varies</i>	<i>Karl S.</i>	<i>T. Matson</i>	<i>J. Partch</i>	<i>A. Nees</i>	<i>R. Kattnig</i>	<i>G. Fiedler</i>	<i>Varies</i>	<i>Varies</i>	<i>Varies</i>	<i>Varies</i>				
		Unadjusted Billing Rate-->	\$194	\$211	\$153	\$102	\$211	\$140	\$141	\$127	\$182	\$146	\$126	\$121	\$140	\$100	\$212	\$78				
		10% Discounted Billing Rate for Town of Granby-->	\$175	\$190	\$138	\$92	\$190	\$126	\$127	\$114	\$164	\$131	\$113	\$109	\$126	\$90	\$191	\$70				
10		Loan/Grant Acquisition Assistance																				
	10.1	SRF/BIL - Review the process & discuss with State's PM and Town		3															3	\$570		\$570
	10.2	SRF/BIL - Assist with completion of Pre-Qual Form and Attend PreQual Meeting		8															8	\$1,519		\$1,519
	10.3	DOLA EIAF - Review the process & discuss with State's PM and Town		2															2	\$380		\$380
		Task Totals		13															13	\$2,469		\$2,469
		PROJECT TOTALS	5	179	176	182	32	52	46	40	5	34	40	8	12	41	47	0	899	\$ 123,710	\$ 17,763	\$ 141,472
			\$ 873	\$ 33,992	\$ 24,235	\$ 16,708	\$ 6,077	\$ 6,552	\$ 5,837	\$ 4,572	\$ 819	\$ 4,468	\$ 4,536	\$ 871	\$ 1,512	\$ 3,690	\$ 8,968	\$ -				

ATTACHMENT D

SGM 2022 Std. Fee Schedule

(Discount labor rates from those shown by 10% for Town of Granby capital projects)



**FEE SCHEDULE 2022
HOURLY RATE**

PRINCIPAL ENGINEER.....	\$211.00
SENIOR ENGINEER III.....	\$194.00
SENIOR ENGINEER II.....	\$182.00
SENIOR ENGINEER I.....	\$167.00
ENGINEER IV.....	\$153.00
ENGINEER III.....	\$140.00
ENGINEER II.....	\$119.00
ENGINEER I.....	\$102.00
SENIOR PROJECT MANAGER.....	\$152.00
PROJECT MANAGER.....	\$141.00
PRINCIPAL CONSULTANT.....	\$211.00
SENIOR CONSULTANT II.....	\$175.00
SENIOR CONSULTANT I.....	\$146.00
CONSULTANT III.....	\$126.00
CONSULTANT II.....	\$110.00
CONSULTANT I.....	\$99.00
TECHNICIAN III.....	\$85.00
TECHNICIAN II.....	\$72.00
TECHNICIAN I.....	\$61.00
CLERICAL.....	\$78.00
SENIOR CADD/GIS.....	\$141.00
CADD/GIS III.....	\$121.00
CADD/GIS II.....	\$110.00
CADD/GIS I.....	\$90.00
CONSTRUCTION MANAGER.....	\$133.00
CONSTRUCTION TECHNICIAN II.....	\$121.00
CONSTRUCTION TECHNICIAN I.....	\$110.00
SURVEY MANAGER.....	\$170.00
LAND SURVEYOR.....	\$140.00
SURVEY PROJECT MANAGER.....	\$120.00
SURVEY TECHNICIAN.....	\$100.00
FIELD SURVEY (1-Man Crew).....	\$159.00
FIELD SURVEY (2-Man Crew).....	\$212.00
SUE FIELD PROJECT MANAGER.....	\$183.00
SUE FIELD TECHNICIAN.....	\$127.00
EXPERT TESTIMONY.....	\$338.00

REIMBURSABLES

<u>Equipment</u>	<u>Rate</u>
Vehicle Mileage.....	Current IRS Standard Mileage Rate
ATV / Snowmobile.....	\$125.00/day
UTV.....	\$250.00/day
Flow Tote.....	\$125.00/day

<u>Reproduction</u>	
Black & White Plots.....	\$ 5.50/sheet
Mylar Plots.....	\$19.00/sheet
Color Plots.....	\$30.00/sheet
Photocopies.....	\$ 0.25/page

Miscellaneous
 10% will be added to all direct expenses, including FedEx, special delivery and courier charges, special consultants, subcontractors, laboratory tests, airfare, lodging, meals, car rental, telephone, outside printing expense, etc. **Interest of 1.5% per month will be charged for invoices past 30 days.**