December 5, 2017

Kathleen Ramsay
Town of Middlebury
1020 South Route 7
Middlebury, VT 05753

Re: **Engineering Services Agreement for preparation of a Water Model and Calibration Report for the Middlebury Water System**
DG 110000

Dear Kathleen:

This AGREEMENT is written pursuant to the **Town of Middlebury's** (OWNER's) request for **Dufresne Group** (ENGINEER) to provide professional engineering services as outlined below.

SCOPE OF SERVICES

Professional engineering services are to be performed by the ENGINEER as detailed in **Attachment No. 1** of this AGREEMENT. The OWNER may, from time to time, request changes in the scope of services to be performed under this AGREEMENT. Any changes in scope, including an increase or decrease in the amount of the ENGINEER's compensation, shall be mutually agreed upon in writing by and between the OWNER and the ENGINEER and shall be incorporated into this AGREEMENT by a written Amendment signed by both parties.

BASIS OF COMPENSATION

For services performed under this AGREEMENT, the CLIENT agrees to compensate the ENGINEER as follows:

I. Basic Services	$44,000	Lump Sum (LS)
II. Special Services	$24,000	NTE
Total amount of items under this AGREEMENT	$68,000	

459 Portland Street, Suite 102
St. Johnsbury, VT 05819
(t) 802.748.8605

297 South Main Street
Barre, VT 05641
(t) 802.479.3698

56 Main Street, Suite 200
Springfield, VT 05156
(t) 802.674.2904

1996 Depot Street
Manchester Center, VT 05255
(t) 802.768.8291

Billing for each work item shall be on a monthly basis as follows:

Lump Sum (LS) Services: Includes all engineering costs and direct expenses per **Attachment No. 2**. Shall be invoiced / billed throughout the project duration based upon percentage complete. The cost to the ~~CLIENT~~ **OWNER** will be limited to the lump sum fee indicated for each LS work item above.

Not-To-Exceed Services (NTE): A Fee based on expenses incurred in the interest of the Project, **will be charged on an hourly rate plus expenses** ~~to include direct labor equal to the actual salaries of personnel, overhead expense of 1.___ times direct labor and profit of ___% of direct labor and overhead, ___ plus reimbursable expenses per Attachment No. 3.~~ The cost to the ~~CLIENT~~ **OWNER** will be at or below the NTE fee indicated for each work item above **unless the budget is modified by amendment to reflect additional work required to complete the task.**

All invoices/bills **for not-to-exceed tasks will accurately depict time and expenses for the invoice period as shown in Attachment No. 5. Invoices for not-to-exceed tasks will also include the budget as amended (if applicable) and show the total costs to date by task based on current and previous invoices.** ~~(see Attachment No. 5) will accurately depict all services provided from the Agreement and any authorized Amendment date through the date of each ___ invoice/bill.~~ All invoices/bills to the OWNER will be formatted to comply with the current **directive from the** State of Vermont Department of Environmental Conservation (DEC)/Facilities Engineering Division (FED) ~~directives.~~

It is understood that the ENGINEER's labor rates are adjusted annually in January **beginning on January 1, 2018**. The fees for services provided under this AGREEMENT and any fully executed Amendment(s) shall be the current rates at the time that the work is performed. Refer to Attachment No. 2 – Schedule of Fees, ~~Attachment No. 3 – Reimbursable Expenses~~ and Attachment No. 4 – Level of Effort

TERMS AND CONDITIONS

Refer to **Attachment No. 6** for the **Terms and Conditions** that govern this AGREEMENT and any fully executed Amendment(s).

EXECUTED AGREEMENT

This AGREEMENT and any fully executed Amendment(s) shall be considered binding when duly authorized agents of the ENGINEER and the OWNER sign the document and one (1) executed copy is returned to the office of the ENGINEER. If this AGREEMENT or any Amendment(s) are not executed within sixty (60) days of the date signed by the ENGINEER, it may be subject to re-negotiation.

DURATION OF SERVICES

The Engineer shall commence services on the Date of Execution of this Agreement, and shall fully complete all authorized services as follows:

- Submittal of all Deliverables in 90 calendar days after notice to proceed

The schedule is based on suitable weather for water system flow tests during non-freezing conditions.

OFFER OF PROFESSIONAL ENGINEERING SERVICES

The ENGINEER, as an independent agent, offers to provide the professional engineering services described in this AGREEMENT, including Attachment **Nos. 1, 2, 4, 5, and 6 (excluding Attachment 3),** for the compensation and duration specified.

Engineer: **Dufresne & Associates, PC dba Dufresne Group**

_____ (signature)
By: **Robert E. Dufresne, PE**
Title: **President**

_____ (signature)
By: **Naomi R. Johnson, PE**
Title: **Senior Vice President**
Dated: **December 5, 2017**

OWNER ACCEPTANCE

The OWNER acknowledges this to be a binding AGREEMENT and agrees to the conditions as stated. The ENGINEER is hereby directed to proceed with the scope of services on the Date of Execution identified below.

The OWNER acknowledges that it has the financial resources and intends to pay for services rendered in accordance with the conditions as stated herein and acknowledges that if invoices are not paid in full within sixty (60) days of date of invoice, that the ENGINEER may stop work, without consequence or liability of any kind, until the invoices are paid.

The OWNER warrants that the signature below is that of its duly authorized representative of the OWNER who possesses the full legal authority to execute this AGREEMENT on behalf of OWNER.

The OWNER acknowledges that this AGREEMENT is comprised of, and incorporates by reference, **Attachment Nos. 1, 2, 4, 5 and 6 (excluding attachment 3)**.

OWNER: **Town of Middlebury, Vermont**

_____
By: **Kathleen Ramsay**
Title: Authorized Representative

_____
Date of Execution

_____
Witness to Signature

Executed in Triplicate

STATE OF VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AND FACILITIES ENGINEERING DIVISION
REQUIRED ENGINEERING FORMAT

This agreement, referred to as the FED Step I Simplified Engineering Agreement is required for projects funded using low interest loan funds under the Clean Water State Revolving Fund (CWSRF) and/or the Drinking Water State Revolving Fund (DWSRF). The original text of the Agreement is shown in Normal Font (example). Deletions from this original text are shown in strike out font (~~example~~) and additions to the text of this agreement are shown in bold font (**example**). These additions and deletions are reviewed by representatives of Facilities Engineering Division for funding eligibility prior to contract signing by the Owner. The following attachments (included in the following) are part of this agreement:

LIST OF ATTACHMENTS

Number	Attachment
1	Scope of Services
2	Schedule of Fees
3 (Not Used)	Reimbursable Expenses (Example – Not Used)
4	Level of Effort
5	Invoice Format Description
6	Terms and Conditions
7	Duties, Responsibilities and Limitations of Authority of the Resident Project Representative

ATTACHMENT 1
SCOPE OF SERVICES
WATER SYSTEM MODEL
MIDDLEBURY, VERMONT
December 5, 2017

I. GENERAL:

A. Dufresne Group (DG) will provide customary civil engineering and consulting services to prepare a computer model of the water system for the Town of Middlebury (CLIENT). A GIS based water system basemap will be prepared as part of the work. A calibration report will be prepared that describes the field testing and the methods used to calibrate the model to reflect actual field test results. DG will provide copies of the GIS database, the input data file, and on-site training in the use and maintenance of the model. These tasks and activities define this PROJECT. The scope of work includes the following items:

II. BASIC SERVICES:

A. DG will perform the following Basic Services:

1. **Attend a kick off meeting and discuss water system operation, water system data file structure, SCADA system (if any), project staff organization, goals and objectives.**
2. **Review all record drawings related to the water system on file at the Town, scan the record drawings and provide a digital copy to the Town.**
3. **Review existing information provided by the CLIENT including previous fire flow test data, tank level charts, certified pump curves or shop drawing information on well pumps and booster pumps, historical pressure data, source flow data, operational logs, SCADA information, customer complaint files, and characteristics of key system components.**
4. **Meet with Town staff and discuss the operational aspects of the water system including the well sources of supply, pressure reducing stations or booster stations, and the distribution storage tank. Visit these facilities, record pertinent data, and photograph these facilities.**

5. **Review drawings and other information for any privately owned and maintained fire pumping systems for large customers which obtain water from the Town's distribution system.**
6. **Review sprinkler system flow and pressure requirements for large customers based on data provided by the CLIENT.**
7. **Discuss water main interconnection points within the distribution system and identify any areas where interconnections are in question.**

B. Assess and Analyze Reported Water Distribution Surges:

1. **Using calibrated digital data loggers and analog paper chart recorders complete two weeks of system pressure monitoring.**
    a. **Two of these monitoring stations will be located at or near water system interconnection points located between the Town of Middlebury and Middlebury College.**
2. **Review the monitoring data and note the existence of any hydraulic surges in the distribution system. Note the characteristics, date, duration, and time of these surges and comment on suspected causes. Screen the source facilities and comment on any potential surge effects due to operation of the well sources of supply. Provide written correspondence on these findings.**
3. **If the source of the surges is not identified, assist the CLIENT in developing a program to identify and resolve the pressure surges.**

C. System Demand Analysis:

1. **Review and analyze total system daily flow for the past three calendar years and determine average and maximum day demand for each of the three years. Develop estimates of peak hour demand based on similar communities. Plot the daily flow for each day of these three calendar years.**
2. **Review and analyze total system daily flow for the past ten years and develop a linear projection to project future estimated average day and maximum day demands for the next 20 years.**
3. **Summarize the existing and future (projected 20 years hence) average day, maximum day, and peak hour demand.**
4. **Using available water meter data provided by the CLIENT determine the ten largest water use customers.**

5. **Develop a system specific extended period simulation global demand factor curve by reviewing source of supply contribution and storage tank fluctuations.**

D. System Storage Analysis:

1. **Assess system storage needs based on emergency storage, peak hour fluctuation, and fire flow storage.**
2. **Discuss active and dead storage in the existing water storage tank.**
3. **Discuss the use of standby power or alternative drives to reduce total water storage requirements.**
4. **Based on engineering guidelines, identify any deficiencies in total water system storage and recommend the amount of additional storage necessary to comply with normal engineering practices.**
5. **Discuss the issue of disinfection byproducts, water age, and ice formation. Discuss the use of alternative mixers or aeration.**

E. Basemap Preparation:

1. **Using the existing water system basemap and record drawings, prepare a water system basemap showing water system attributes including source facilities, storage tanks, control vaults, pressure reducing valves, booster pumping stations, mainline valves, hydrants, and blow-offs and water main characteristics including diameter, material, minor losses, approximate installation date, location, interconnection details, and information source.**
2. **Receive any digital background GIS files from the CLIENT showing structures, roads, and ground elevation with contour intervals of at least 5 feet. The background for the basemap can be GIS layers, orthophotos, USGS, or other topographic mapping preferred by the CLIENT.**
3. **Ensure the basemap data will be interchangeable for viewing and plotting in either ArcGIS or AutoCAD software.**

F. Using WaterGEMS®, prepare a water system computer model using water system information.

1. **Use the water system basemap to set the general location of water mains and add other features and/or attribute files including:**

    a. **Water main attributes as described above. All known distribution or transmission piping (including 2-inch diameter mains and above) will be included in the model input file. Any water line serving more than two customers as described by the CLIENT will be included in the model regardless of the diameter. Privately owned water mains or related water works facilities served by the Town of Middlebury will be identified as private and included in the model.**
    b. **Customers located in high elevation areas. These customers will be represented as individual nodes for use in setting the system pressure requirements during fire flow suppression.**
    c. **Groundwater source locations, pump curves, system head curve showing suction and discharge pressure relationships during various flow conditions.**
    d. **Storage tank size, geometry, material, and construction date.**
    e. **Any control structures such as altitude valves.**
    f. **Any source control logic such as well operation based on tank level.**
2. **Meet with the Town of Middlebury Water Department Superintendent and review the basemap and input file for the model.**
3. **Update the basemap and input file for the model based on CLIENT input.**

G. Model Calibration:

1. **Calibrate the model using a steady state analysis and incorporate information obtained during the field tests.**
2. **In addition to field test locations and existing pressure monitoring stations (if any), establish three additional pressure calibration monitoring locations for use during fire flow testing and C-value testing. Under special services obtain horizontal location using Vermont State Plane coordinates and the elevation using NAVD88**

vertical datum using sub-centimeter survey grade instruments. The calibrated pressure recorders will be provided and installed by DG to monitor and record system pressure during normal operation and during the field testing.

3. **Obtain the most recent water system testing records from the Insurance Services Organization (ISO). Depending on the age of the data, this information may be used for preliminary calibration data and will be used to establish proposed fire flow locations and to establish the Needed Fire Flow (NFF) listed at these locations.**
4. **Verify that boundary conditions and operational parameters are accurately represented in the model using information obtained through the CLIENT or by field visits including:**
    a. **Observations of the operation of the well pumping stations to verify pump curves, flow, and pressure information. Calibrated pressure gauges will be used to obtain suction and discharge pressure.**
    b. **Observe the operation of any main line pressure reducing valves to verify pressure and hydraulic gradeline information. Calibrated gauges will be used to determine upstream and downstream pressures.**
    c. **Observe the operation of any main line booster pumping stations to verify pressure and hydraulic gradeline information. Calibrated gauges will be used to determine upstream and downstream pressures.**
    d. **Calibrate SCADA data for tank level to actual elevations**
5. **Documentation of attempts to calibrate shall be kept and incorporated into the model as notes, as well as in the final technical documents.**
6. **Prepare a calibration report which outlines how the water model was prepared, reviewed, and calibrated and provide color basemaps of the water system to include water mains colored by diameter.**

H. Using of the Calibrated Model for analysis of alternative improvements:

1. **Using the calibrated water system model, assist the CLIENT in identifying water system deficiencies and assessing potential system improvements to resolve these deficiencies. Identify existing water distribution infrastructure deficiencies as follows:**

a. **Any areas in the water service area where customers have less than 35 psi during either existing or future average day demand conditions.**
b. **Any areas in the water service area where customers have less than 20 psi during any of the "Needed Fire Flow" (NFF) locations identified by the Insurance Service Organization (ISO) as listed in the latest ISO report or during peak hour demand.**
c. **Any water transmission or distribution mains that are deficient based on headloss and velocity criteria as developed by the American Water Works Association (AWWA).**

2. **Prepare a water service area basemap showing areas within the Town of Middlebury that can be served based on the current water system gradeline such that customers have at least 35 psi at the first floor location. Identify areas that are subject to pressures less than 20 psi during ISO established Needed Fire Flows concurrent with future maximum day demand. Also show areas that are subject to pressures less than 20 psi during minimum fire flows of 500 gpm as provided under the Vermont Water Supply Rule concurrent with future maximum day demand.**
3. **Based upon modeling results, recommend existing infrastructure rehabilitation to resolve system deficiencies or add flexibility and reliability. Include consideration of water storage tanks if beneficial in stabilizing pressures at system extremities and contribution of fire flow. Assess the fill and draw rates for potential storage tanks using Extended Period Simulation analysis.**
    a. **One location for analysis of a potential future water storage tank will be on the property currently owned by A. Johnson located east of School House Hill Road**
4. **Discuss current planning and zoning trends and identify any areas planned for development likely to be above the current water service area or outside the limits of the existing water distribution system.**
5. **Evaluate the list of water main projects identified in the June 30, 2017 Water Main Replacement Planning Memo by simulating these projects as completed and noting any differences between the existing system (without these improvements) and if these improvements were completed. Analyze differences during fire**

flow transmission and peak demand. These potential projects currently defined include:

a. **7,500 linear feet on US Route 7 – Cady Hill Road**
b. **7,000 linear feet Exchange Street**
c. **A potential connecting loop from Happy Valley Road to Exchange Street as an alternative to improve peak hour pressures in the Painter Hills subdivision.**
    i. **Evaluate this potential loop as an alternative supply to the Exchange Street Industrial Park and its effect on the customers east of Happy Valley Road.**
d. **Court Square area**
e. **South Street from Main Street to Porter Field Road**
f. **4,000 linear feet in the Gorham Subdivision**
g. **Foote Street**
h. **Woodland Park, Meadow Way and Swanage – Replace asbestos cement (AC) pipe**
i. **Cross Country Line from Palmer Springs to Colonial Drive**
j. **2,600 linear feet on Sheep Farm Road from Waybridge Street to Sheep Farm Road**
k. **Colonial Drive**
l. **Washington Street Extension to Happy Valley Road**
m. **Washington Street**

6. **Evaluate opportunities for micro-electric generation in the water distribution system.**
7. **Develop a priority ranking system based on consideration of the following factors.**
    a. **Existing condition based on history of leakage**
    b. **Estimated Capital Cost**
    c. **System hydraulic benefits**
    d. **Local acceptance**
    e. **Compliance with local planning trends and infrastructure needs**
8. **Based upon modeling results, recommend a prioritized list of existing infrastructure rehabilitation to resolve system deficiencies or add flexibility and reliability. Estimate the construction cost and total capital cost for these improvements.**

I. **Provide the following deliverables as part of the project:**

1. **A data file on a thumb drive, which has all scanned mapping used in the PROJECT.**
2. **Agendas and memos for all meetings regarding the project.**
3. **A calibration report outlining the field test procedures, field test data, pressure monitoring charges, and the measures taken to calibrate the model.**
4. **A file with photos and equipment descriptions for the source, storage, and pumping facilities.**
5. **A copy of the input file.**
6. **A GIS database with the water system attributes. The database will be compatible with the CLIENT's MapInfo GIS Software. The database will include shape files (.shp) for use with CLIENT's MapInfo GIS Software.**
7. **A letter report on system surges.**

III. SPECIAL SERVICES:

A. DG will provide the following special services for this PROJECT:

1. **Meet with the CLIENT three times during the PROJECT (in addition to normal field visits) and discuss findings and receive input. Prepare agendas and written minutes of these proceedings. Distribute copies to those attending the meeting.**
2. **Using sub-centimeter survey grade equipment, complete topographic survey services and obtain the three dimensional location for major water works facilities including:**
    a. **Water source facilities**
    b. **Water storage facilities (floor and overflow elevations)**
    c. **Pressure monitoring locations**
    d. **Distribution system pressure reducing valve vaults**
    e. **Pressure booster stations**
    f. **High elevation customers**
3. **Using sub-centimeter survey grade equipment, complete topographic survey services and obtain the three dimensional location for the hydrants or pressure monitoring locations used during fire flow and C-Value testing.**
4. **Perform approximately ten fire flow tests and approximately two C-value tests. Locations of the various tests will be selected based on review of the existing model and existing information.**

5. **Assist with the preparation of funding applications including the State Revolving Loan Application for funding under the Drinking Water State Revolving Fund (DWSRF) program.**
6. **Meet with the CLIENT and the Infrastructure Committee two times during the PROJECT to review the results of the study and to review the next steps toward a bond vote. Prepare agendas and written minutes of these proceedings. Distribute copies to those attending the meeting.**
7. **After the CLIENT purchases a copy of WaterGEMS, provide 8 hours of on-site training in the use and maintenance of the water system hydraulic model including methods for the following:**
    a. **Data input for pipes, nodes, minor losses, tanks, pressure control valves, pumps and motors (constant rpm and variable speed), and sources of supply.**
    b. **Simulating a fire flow and analysis of system effects.**
    c. **Simulating an alternative system improvement; pipe, tank, booster pump station, and pressure reducing valve.**
    d. **Setting demand patterns for extended period simulations.**
    e. **Use of the extended period simulation for assessing tank fill rates and pressure fluctuations during the day.**
8. **Schedule and visit facilities of the 10 largest use customers and discuss water use characteristics including estimated peak instantaneous use. Attempt to obtain the data via phone or e-mail contact for any users that do not agree to a site visit.**

END OF ATTACHMENT No. 1

ATTACHMENT NO. 2

Schedule of Fees)

Standard Hourly Rates:

Standard hourly rates include salaries and wages paid to personnel in each billing class plus the cost of customary benefits, general and administrative overhead, non-project operating costs, and operating margin or profit.

The billing rates listed apply (for the duration of this agreement unless it is specifically amended or until __(date)___) for Additional Services as described in Attachment No. 1 - Scope of Services, Section 5.

Schedule: (Example)

Billing Class	Position Title	Hourly Rate
9	Principal	$_____
8	Staff Manager	$_____
7	Project Manager	$_____
6	Project Engineer	$_____
5	Senior Engineer	$_____
4	Staff Engineer	$_____
3	Junior Engineer	$_____
2	Senior Technician	$_____
1	Technician	$_____
Administrative Staff		$_____

TABLE 1
SCHEDULE OF RATES AND TERMS FOR YEAR ENDING 2018

FEES:

Engineering and Technical Services:

President (R. Dufresne, P.E.)	$190.00 per hour
Senior Civil Engineer/Office Manager (N. Johnson, P.E.; VP)	$175.00 "
Project Manager/Office Manager (C. M. Haskins, PE)	$132.00 " "
Project Manager/Office Manager (A. J. Day, PE)	$120.00 " "
Project Manager (J. L. Dechen, PE)	$112.00 " "
Project Engineer (T. P. Knapp, PE)	$105.00 " "
AutoCAD Design Tech/RPR/Office Manager (B. Baker, CST-B)	$95.00 " "
Field Engineer (R. Goodwin)	$95.00 " "
Engineer/AutoCAD Designer/RPR (E. A. Emmons, EI)	$85.00 " "
Entry Engineer/AutoCAD/RPR (C. W. Flower, EI)	$85.00 " "
Technician/AutoCAD/RPR Tech (M. Bissell, AS)	$72.00 " "
Technician/AutoCAD/RPR Tech (M. Bissell, AS, Z. Ferguson, EI)	$70.00 " "
Technician/AutoCAD/RPR Tech (S. Russ	$70.00 " "
Survey Tech	$65.00 " "
Entry Level Technician	$55.00 " "
Co-op Engineer or Technician	$50.00 " "

Administrative Services:

Clerical Office Manager	$65.00 per hour
Clerk Typist	$40.00 per hour

EXPENSES:

Mileage - passenger car	$ 0.535 per mile
Use of soils or survey truck and related equipment	$0.68 per mile

Scanning, Copying

24" x 36"	$1.50 each for scans
24” x 36”	$2.50 each for prints
8½" x 11" B&W	$.10 each
8 ½” x 11” Color	$.20 each
11" x 17" B&W	$.49 each
11” x 17” Color	$.98 each

Subcontracted Services:

Equipment charges, backhoe, outside surveying, mapping or Reproduction services, special consultants, if required ..... At Cost Plus 8%

Other charges not listed herein:

Miscellaneous charges not listed ..... By Mutual Agreement

TERMS AND CONDITIONS:

1. Time provided in excess of 40 hours per week or after 9 PM for night time inspection shall be provided at 150% of the rates shown.
2. Time and Expense Charges for Dufresne Group (DG) are valid through December 31, 2018
3. Dufresne Group is owned by Dufresne & Associates, PC

NOTES - SCHEDULE OF RATES AND TERMS FOR YEAR ENDING 2018

1. **Time provided in excess of 40 hours per week or after 9 PM for night time flow testing is provided at 150% of the rates shown.**
2. **Time and Expense Charges for Dufresne Group (DG) are valid through December 31, 2018.**
3. **New Employees may be added from time to time at charge rates commensurate with their qualifications and experience.**
4. **Items paid on a time and expense basis shall be based on the rate table as previously shown in this Attachment.**
5. **Reimbursable expenses shall be defined as the actual expenses incurred directly or indirectly in connection with the project for independent professional associates or consultants. Costs for work by others shall be charged to the CLIENT at 108% of the actual cost incurred. Charges for transportation and subsistence; mail, reproduction of reports, drawings, specifications, meals and lodging, and project related telephone charges shall be charged at the actual cost incurred without mark up.**
6. **Services provided under the Not to Exceed (NTE) method of payment shall not exceed the total limit for all NTE items shown. DG agrees to cease all activity under such items until the limit is formally modified. Where individual estimates are shown (Resident Project Representation, Special Services, and Additional Services), DG can modify individual estimates as necessary as long as the total limiting sum for special services is not exceeded.**
7. **Services provided under a fixed fee or lump sum basis shall be billed on a percent complete basis.**
8. **The fees are based on the "level of effort" as shown in Attachment 4. Any significant changes in the project schedule or the anticipated level of effort may require amending the fees and charges to reflect such changes**.

END OF ATTACHMENT NO. 2

ATTACHMENT NO. 3

Reimbursable Expenses (Example)

The expense items listed below will be billed as follows:

Subconsultant & Vendor Expenses:

Subconsultants	@ cost or cost plus a maximum of 8%
Outside Vendors	@ cost or cost plus a maximum of 8%

Travel Related Expenses:

Auto Travel (to include gas and other service charges)*	@ $0.51/mile
* Mileage reimbursement limited to maximum federal government rate. As of January 1, 2011 the mileage rate is $0.51/mile.	
Other Travel (to include air fares, rentals, tolls, etc.)	@ cost
Meals & Lodging	@ cost

Reproduction Expenses (provided in-house):

Reproductions (provided in-house)	
8½ x 11 one sided copy	@ $0.08/each
8½ x 11 two sided copy	@ $0.12/each
24 x 36 blueline print	@ $3.50/each
36 x 48 blueline print	@ $5.00/each
Mylar or velum plots	@ $8.00/each

Administrative Expenses:

Postage	@ cost
Shipping	@ cost
Other Administrative Expenses	@ cost

END OF ATTACHMENT NO. 3

ATTACHMENT 4

Summary Sheet
Water System Hydraulic Model using Water GEMS
Middlebury, Vermont
December 5, 2017

Sheet	Description	Cost
1 of 5	Summary Sheet	N/A
2 of 5	Basic Services	$23,279.00
3 of 5	Basic Services	$11,746.00
4 of 5	Basic Services	$8,975.00
5 of 5	Special Services	$24,000.00
Total Basic Services		$44,000.00
Total Special Services		$24,000.00
Total All Services		**$68,000.00**

Dufresne Group
SPRINGFIELD, VERMONT 802-674-2904
BARRE, VERMONT 802-479-3689
SAINT JOHNSBURY, VERMONT 802-748-8605
MANCHESTER CENTER, VERMONT 802-768-8291

TABLE 2 LEVEL OF EFFORT BUDGET WORKSHEET

Project Name: Middlebury Water Model **Project No.:** 4180001 **Date: December 5, 2017**

Task Number	Task Description	Principal RED, PE (Hrs)	Sr CE OM NRJ, PE (Hrs)	PM OM CML, PE (Hrs)	PM OM AJD, PE (Hrs)	Proj Mgr JLD, PE (Hrs)	Proj Engr TPK, PE (Hrs)	Field Engr BLB RNG (Hrs)	Des Engr EAE-CWF (Hrs)	Entry Egr MCB (Hrs)	Tech RPR ZF - SR (Hrs)	Survey Tech (Hrs)	Entry Tech (Hrs)	Co-op Tech (Hrs)	Sr Clerical (Hrs)	Clerical (Hrs)	Sub Consult (Hrs)	Expenses (Dollars)	Cost Per Task
I	**General**																		
A	Project Description																		
II	**Basic Services**																		
A	**Basic Services**																		
1	Kick off meeting and transfer of system information	8					8											$80	$2,440
2	Review and scan water system record drawing information						2									4			$370
3	Review information on water system components and data	8					16												$3,200
4	Visit and assess information on major water system assets						16											$140	$1,820
5	Review information on privately-owned fire pump systems						8												$840
6	Review sprinkler flow requirements for large structures						2												$210
7	Discuss interconnections in question						2												$210
B	**Assess and Analyze Reported Water Distribution Surges**																		
1	Set up and complete two weeks of water system monitoring						20											$277	$2,377
a	*Install Monitors at Town/College interconnect points*																		
2	Review monitoring data and provide letter report	4					8												$1,600
3	Develop program to identify source of surges	2					4												$800
C	**System Demand Analysis**																		
1	Review daily flow data for past three years and identify average and maximum day demand for each year						1			4									$393
2	Review average day demand for previous ten years and project demand 20 years hence						2			8									$786
3	Summarize average day, maximum day, and peak hour demand 20 years hence	1					1												$295
4	Identify 10 highest use customers						2												$210
5	Develop a system specific EPS global demand factor curve		2				4												$770
D	**System Storage Analysis**																		
1	Assess system storage needs based on emergency storage, peak hour fluctuation, and fire flow storage	1					4												$610
2	Discuss active and dead storage						1												$105
3	Discuss the use for standby power to reduce storage needs						2												$210
4	Recommend amount of water system storage required in Middlebury						1												$105
5	Discuss DBP's, water age, ice, mixers, and aeration						4												$420
E	**Basemap Preparation**																		
1	Prepare basemap showing water system attributes						24			24									$4,248
2	Receive digital background GIS files and use in the model						4												$420
3	Insure the basemap data is interchangeable in ArcGIS and AutoCAD						8												$840
Total Hours		24	2	0	0	0	144	0	0	36	0	0	0	0	0	4		$497	
Percent of Total Hours		11%	1%	0%	0%	0%	69%	0%	0%	17%	0%	0%	0%	0%	0%	2%			
Hourly Rate		$190.00	$175.00	$132.00	$120.00	$112.00	$105.00	$95.00	$85.00	$72.00	$70.00	$65.00	$55.00	$50.00	$65.00	$40.00			
Subtotals		$4,560	$350	$0	$0	$0	$15,120	$0	$0	$2,592	$0	$0	$0	$0	$0	$160	$0	$497	$23,279

NOTES:

1 Hourly rates are valid through December 31, 2018

2 Subconsultant column includes an 8% markup is included in Cost per task column.

3 Mileage from Springfield Office to Middlebury is 150 miles. At $0.535 per mile, the round trip expense is $80.

4 Highlighted rows do not have associated costs.

Dufresne Group
SPRINGFIELD, VERMONT 802-674-2904
BARRE, VERMONT 802-479-3689
SAINT JOHNSBURY, VERMONT 802-748-8605
MANCHESTER CENTER, VERMONT 802-768-8291

TOTAL FEES	**$23,279**
TOTAL HOURS	210

TABLE 2 LEVEL OF EFFORT BUDGET WORKSHEET

Project Name: Middlebury Water Model **Project No.:** 4180001 **Date: December 5, 2017**

Task Number	Task Description	Principal RED, PE (Hrs)	Sr CE OM NRJ, PE (Hrs)	PM OM CML, PE (Hrs)	PM OM AJD, PE (Hrs)	Proj Mgr JLD, PE (Hrs)	Proj Engr TPK, PE (Hrs)	Field Engr BLB RNG (Hrs)	Des Engr EAE-CWF (Hrs)	Entry Egr MCB (Hrs)	Tech RPR ZF - SR (Hrs)	Survey Tech (Hrs)	Entry Tech (Hrs)	Co-op Tech (Hrs)	Sr Clerical (Hrs)	Clerical (Hrs)	Sub Consult (Hrs)	Expenses (Dollars)	Cost Per Task
F	**Using WaterGEMS prepare a water system computer model**																		
1	Using the basemap add water system features and attributes including:						8												$840
a	*Water Main*																		
b	*High Elevation Customers*																		
c	*Groundwater Source locations and pump characteristics*																		
d	*Storage tank geometry*																		
e	*Control Structures*																		
f	*Source control logic*																		
2	Meet with Town officials and review input file and basemap						8											$80	$920
3	Update input file and basemap to reflect Client review						2												$210
G	**Model Calibration:**																		
1	Calibrate using field test information						16												$1,680
2	Use pressure monitoring and elevation data for calibration						2												$210
3	Use ISO NFF data for calibration trials						1												$105
4	Verify boundary conditions						1												$105
a	Observe source pumping systems						1												$105
b	Observe PRV's						1												$105
c	Observe booster pump operation						1												$105
5	Provide documentation of calibration in the model notes						4												$420
6	Provide a calibration report on activities		8				16												$3,080
H	**Use calibrated model for analysis**																		
1	Identify system deficiencies		2				4												$770
a	*Service areas below 35 psi*																		
b	*Areas with less than 20 psi during ISO fire flows*																		
c	*Deficient areas based on velocity or headloss data*																		
2	Prepare water service map and show deficient areas						2			8									$786
a	One tank on Johnson Property east of School Ho. Hill Rd.		1				2												$385
3	Recommend alternative system improvements for deficient areas	2	2				8												$1,570
4	Discuss planning and zoning trends for system expansion		2																$350
Total Hours		2	15	0	0	0	77	0	0	8	0	0	0	0	0	0		$80	
Percent of Total Hours		2%	15%	0%	0%	0%	75%	0%	0%	8%	0%	0%	0%	0%	0%	0%			
Hourly Rate		$190.00	$175.00	$132.00	$120.00	$112.00	$105.00	$95.00	$85.00	$72.00	$70.00	$65.00	$55.00	$50.00	$65.00	$40.00			
Subtotals		$380	$2,625	$0	$0	$0	$8,085	$0	$0	$576	$0	$0	$0	$0	$0	$0	$0	$80	$11,746

NOTES:

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TOTAL FEES	**$11,746**
TOTAL HOURS	102

TABLE 2 LEVEL OF EFFORT BUDGET WORKSHEET

Project Name: Middlebury Water Model **Project No.:** 4180001 **Date:** December 5, 2017

Task Number	Task Description	Principal RED, PE (Hrs)	Sr CE OM NRJ, PE (Hrs)	PM OM CML, PE (Hrs)	PM OM AJD, PE (Hrs)	Proj Mgr JLD, PE (Hrs)	Proj Engr TPK, PE (Hrs)	Field Engr BLB RNG (Hrs)	Des Engr EAE-CWF (Hrs)	Entry Egr MCB (Hrs)	Tech RPR ZF - SR (Hrs)	Survey Tech (Hrs)	Entry Tech (Hrs)	Co-op Tech (Hrs)	Sr Clerical (Hrs)	Clerical (Hrs)	Sub Consult (Hrs)	Expenses (Dollars)	Cost Per Task
5	Evaluate the list of locally identified system improvements																		
a	Cady Hill Road						2												$210
b	Exchange Street						2												$210
c	Loop from Happy Valley to Exchange Street						4												$420
i	Evaluate effects on customers east of Happy Valley Road						1												$105
d	Court Square area						2												$210
e	South Street from main Street to Porter Field Road						2												$210
f	Gorham Subdivision						2												$210
g	Foote Street						2												$210
h	Woodland Park Meadow Way and Swanage						2												$210
i	Cross country from Palmer Springs to Colonial Drive						2												$210
j	Sheep Farm Road						2												$210
k	Colonial Drive						2												$210
l	Washington Street Extension to happy Valley Road						2												$210
m	Washington Street						2												$210
6	Evaluate micro-electric generation opportunities	1	2				4												$960
7	Develop ranking system based on factors listed below:	2	2				4												$1,150
a	*Existing condition based on leakage history*																		
b	*Estimated capital cost*																		
c	*System hydraulic benefits*																		
d	*local acceptance*																		
e	*Compliance with local planning trends and infrastructure needs*																		
8	Develop prioritized list of improvements	4	4				8	16											$3,820
I	**Provide deliverables: (time is included in other tasks)**																		
1	Digital copy of record drawings and scanned data																		
2	Agendas and memos for record of all meetings																		
3	Calibration report																		
4	digital file of equipment descriptions																		
5	Copy of the WaterGEMS input file																		
6	A GIS database with the water system attributes																		
7	A letter report on system surges																		
Total Hours		7	8	0	0	0	45	16	0	0	0	0	0	0	0	0		$0	$8,975
Percent of Total Hours		9%	11%	0%	0%	0%	59%	21%	0%	0%	0%	0%	0%	0%	0%	0%			
Hourly Rate		$190.00	$175.00	$132.00	$120.00	$112.00	$105.00	$95.00	$85.00	$72.00	$70.00	$65.00	$55.00	$50.00	$65.00	$40.00			
Subtotals		$1,330	$1,400	$0	$0	$0	$4,725	$1,520	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$8,975

NOTES:

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5 Cost for providing deliverables is included in individual items.

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TOTAL FEES	**$8,975**
TOTAL HOURS	76

TABLE 2 LEVEL OF EFFORT BUDGET WORKSHEET

Project Name: Middlebury Water Model **Project No.: 4180001** **Date: December 5, 2017**

Task Number	Task Description	Principal RED, PE (Hrs)	Sr CE OM NRJ, PE (Hrs)	PM OM CML, PE (Hrs)	PM OM AJD, PE (Hrs)	Proj Mgr JLD, PE (Hrs)	Proj Engr TPK, PE (Hrs)	Field Engr BLB RNG (Hrs)	Des Engr EAE-CWF (Hrs)	Entry Egr MCB (Hrs)	Tech RPR ZF - SR (Hrs)	Survey Tech (Hrs)	Entry Tech (Hrs)	Co-op Tech (Hrs)	Sr Clerical (Hrs)	Clerical (Hrs)	Sub Consult (Hrs)	Expenses (Dollars)	Cost Per Task
III	**Special Services**																		
A	Special Services																		
1	Meet three times during project	18	6				24											$260	$7,250
2	Topographic survey including:								10									$80	$930
a	*water sources*																		
b	*water storage tank*																		
c	*pressure monitoring stations*																		
d	*Distribution system pressure regulation valves*																		
e	*Booster Stations*																		
f	*High Elevation customers*																		
3	Obtain 3D location of fire flow tests and C-value test locations								10									$80	$930
4	Perform 10 fire flow tests and 2 C-Value tests						24		16									$160	$4,040
5	Assist with funding applications		16		16														$4,720
6	Meet twice with Infrastructure Com. to discuss bond vote	6	6				12												$3,450
7	Provide 8 hours of onsite training including;						16											$80	$1,760
a	*data input*																		
b	*fire flow simulations*																		
c	*simulate system improvements*																		
d	*Setting demand patterns for EPS*																		
e	*Using EPS for tank fill rates*																		
8	visit high use facilities and discuss demand characteristics						8											$80	$920
Total Hours		24	28	0	16	0	84	0	36	0	0	0	0	0	0	0		$740	
Percent of Total Hours		13%	15%	0%	9%	0%	45%	0%	19%	0%	0%	0%	0%	0%	0%	0%			
Hourly Rate		$190.00	$175.00	$132.00	$120.00	$112.00	$105.00	$95.00	$85.00	$72.00	$70.00	$65.00	$55.00	$50.00	$65.00	$40.00			
Subtotals		$4,560	$4,900	$0	$1,920	$0	$8,820	$0	$3,060	$0	$0	$0	$0	$0	$0	$0	$0	$740	$24,000

NOTES:

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DUFRESNE GROUP CONSULTING ENGINEERS

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TOTAL FEES	**$24,000**
TOTAL HOURS	188

ATTACHMENT NO. 5

As a minimum, the following information must appear on each engineering invoice/bill to project Owners expecting loan or grant reimbursement from the VT FED

Engineering Consultant's Letterhead

To: _____ Date _____
_____ Payment Request No._____
_____ Engineer Invoice No. _____
_____ Billing period: _____ to _____

Project #: Project Title: _____
State Loan and/or Grant No.: _____

List all engineering service categories as they appear in the approved Agreement. If a lump sum (LS) fee, identify the total $ for each service, the total previously billed, the amount due this billing period and the % complete including this billing. If a not-to-exceed (NTE) fee, identify personnel, hourly billing rate, hours and reimbursable expenses. If under a single service category there are multiple line item services with corresponding NTE amounts, all line item services must be listed and tracked monthly to reflect the amount previously billed, amount due this period, total amount to date and % complete of line item based on the amount identified in the agreement

Engineering Step & Service Summary*

Agreement date:_____

Step I Phase	**Previously Billed**	**Due this period**	**Total to date**	**%**
Feasibility Study and Report Agreement: $ _____ (LS)	$_____	$ _____	$ _____	___
Other: List each service, $ __ (LS or NTE)	$_____	$ _____	$ _____	___
Amendments: List each service, $ __ (LS or NTE)	$_____	$ _____	$ _____	___
Preliminary Design: Agreement: $ _____ (LS or NTE)	$_____	$ _____	$ _____	___
Other: List each service, $ ___ (LS or NTE)	$_____	$ _____	$ _____	___
Amendments: List each service, $ ___ (LS or NTE)	$_____	$ _____	$ _____	___
TOTAL Step I Phase	**$ _____**	**$ _____**	**$_____**	**___**

As a minimum, the following information must appear on each engineering invoice/bill to project Owners expecting loan or grant reimbursement from the VT FED

Agreement date: _____

Step II Phase	**Previously Billed**	**Due this period**	**Total to date**	**%**
Final Design				
Agreement: $ _____(LS)	$_____	$ _____	$ _____	___
Other:				
List each service, $ ___ (LS or NTE)	$_____	$ _____	$ _____	___
Amendments:				
List each service, $ ___ (LS or NTE)	$_____	$ _____	$ _____	___
TOTAL Step II Phase $ _____				
TOTAL	**$ _____**	**$ _____**		___

Agreement date: _____

Step III Phase **	**Previously Billed**	**Due this period**	**Total to date**	**%**
Bidding Services				
$ _____ (LS or NTE)	$_____	$ _____	$ _____	___
Construction Basic (including 1 year performance evaluation and 11th month inspection when required)				
$ _____ (LS)	$_____	$ _____	$ _____	___
Resident Project Representative:				
$ _____ (NTE)	$_____	$ _____	$ _____	___
Other:				
List each service, $ ___ (LS or NTE)	$_____	$ _____	$ _____	___
Amendments:				
List each service, $ ___ (LS or NTE)	$_____	$ _____	$ _____	___
TOTAL Step III Phase	**$ _____**	**$ _____**	**$ _____**	___

***Sub-consultant and other services:** provide the same billing/invoice information under the appropriate engineering service listing and attach a copy of their bill/invoice. (Note: allowable engineer mark-up NTE 8%)

**** Construction Contract** – Date of issuance of the "Notice to Proceed": _____

Original Construction Contract Completion date: _____

Latest Amended Construction Contract Completion date: _____

Certification statement: I certify that the services provided during this billing period are, to the best of my knowledge and belief, in accordance with the Agreement and any Amendments executed by the Owner and Engineer and as approved for funding by the State of Vermont. By: _____

(Engineer's signature)

ATTACHMENT NO. 6

TERMS AND CONDITIONS

Extent of Agreement: This Agreement comprises the final and complete agreement between the Owner and the ENGINEER. It supersedes all prior or contemporaneous communications, representations, or agreements, whether oral or written, relating to the subject matter of this Agreement. Execution of this Agreement signifies that each party has read the document thoroughly, has had any questions explained by independent counsel, and is satisfied. Amendments to this Agreement shall not be binding unless made in writing and signed by both the Owner and the ENGINEER.

1. Billings/Payments: Invoices will be submitted monthly by the ENGINEER, in the format required by the Vermont DEC/FED, to the OWNER for all services provided and expenses incurred to date and, unless other mutually satisfactory arrangements have been made between the OWNER and the ENGINEER, are due upon receipt. The invoices shall be considered past due if not paid within sixty (60) days after the invoice date and the ENGINEER may, without waiving any claim or right against the OWNER, and without liability whatsoever to the OWNER, terminate the performance of the service. A finance charge will be assessed in the amount of 1.5% per month on unpaid balances with interest accruing on any balance aging over 60 days. If the OWNER fails to make payments when due or otherwise is in breach of this AGREEMENT and any fully executed Amendments, the ENGINEER may suspend performance of services upon five (5) calendar day notice to the OWNER. The ENGINEER shall have no liability whatsoever to the OWNER caused by any breach of this AGREEMENT and any fully executed Amendments by the OWNER. If the OWNER fails to make payment to the ENGINEER in accordance with the payment terms herein, this shall constitute a material breach of this AGREEMENT and shall be cause for termination by the ENGINEER. Payment of invoices is in no case subject to unilateral discounting or set-offs by the OWNER, and payment is due regardless of suspension or termination of the AGREEMENT by either party.

2. Standard of Care: Services provided by the ENGINEER under this agreement will be performed in a manner consistent with the degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances and under their licensure by the State of Vermont.

3. Termination: The OWNER or the ENGINEER may suspend the Agreement upon giving seven (7) calendar days written notice. This AGREEMENT and any fully executed Amendments may be terminated upon no less than thirty (30) calendar days prior written notice by either party. In the event of termination by written notice, the OWNER shall pay the ENGINEER for all services rendered to the date of termination, all reimbursable expenses, and may include reasonable termination expenses if the termination is initiated by the OWNER.

4. Access to Site: Unless otherwise stated, the ENGINEER will have safe and legal access to the Site for activities necessary for the performance of the services. The ENGINEER will take precautions to minimize damage due to these activities, but shall not be held responsible for the restoration of any resulting damage. Arrangements and/or permission for access to the site shall be made by the OWNER unless otherwise stated. The OWNER shall provide for the ENGINEER's right to enter the property owned by the OWNER and/or others in order for the ENGINEER to fulfill the scope of services included hereunder. The OWNER understands that use of testing or other equipment may unavoidably cause some damage, the correction of which is not part of this AGREEMENT or any fully executed Amendments.

5. Buried Utilities: The ENGINEER and/or its authorized subconsultant will conduct the research that in its professional opinion is necessary with respect to the assumed locations of underground improvements. Such services by the ENGINEER or its subconsultant will be performed in a manner consistent with the ordinary standard of care. The OWNER recognizes that the research may not identify all underground improvements and that the information upon which the ENGINEER relies may contain errors or may not be complete. The OWNER agrees, to the fullest extent permitted by law, to waive all claims and causes of action against the ENGINEER and anyone for whom the ENGINEER may be legally liable, for damages to underground improvements resulting from subsurface penetration locations established by the ENGINEER.

6. Timeliness: The ENGINEER will perform its services with due and reasonable diligence consistent with sound professional practices.

7. Delays: The ENGINEER is not responsible for delays caused by factors beyond the ENGINEER's reasonable control. When such delays beyond the ENGINEER's reasonable control occur, the ~~CLIENT~~ OWNER agrees that the ENGINEER is not responsible for damages, nor shall the ENGINEER be deemed to be in default of this AGREEMENT or any fully executed Amendment.

8. Hidden Conditions: A condition is hidden if it cannot be investigated by reasonable visual observation or records reviewed as customary in the performance of the services being rendered. If the ENGINEER has reason to believe that such a condition may exist, the ENGINEER shall notify the OWNER who shall authorize and pay for costs associated with the investigation of such a condition and, if necessary, costs necessary to correct said condition. If the OWNER fails to authorize such investigation or correction after due notification, or the ENGINEER has no reason to believe that such a condition exists, the OWNER is responsible for all risks associated with this condition, and the ENGINEER shall not be responsible for the existing condition nor any resulting damages to persons or property.

9. Hazardous Materials: Unless specifically agreed upon prior to the commencement of service, the ENGINEER shall have no responsibility for the discovery, presence,

handling, removal, disposal of, or exposure of persons to hazardous materials of any form.

10. Subconsultants: The ENGINEER may use the services of subconsultants when, in the ENGINEER's sole opinion, it is appropriate and customary to do so.

11. Ownership of Documents: All documents produced by the ENGINEER under this AGREEMENT and any fully executed Amendment(s) shall remain the property of the ENGINEER and will not be used by the OWNER for any other endeavor without the consent of the ENGINEER. The OWNER has, and will retain the right to use the documents for all project purposes. The OWNER shall indemnify and hold harmless the ENGINEER for any re-use, mis-use or alteration of said documents.

12. Additional Services: Services not explicitly detailed in this AGREEMENT or fully executed Amendment(s) will not be provided without the OWNER's prior written authorization.

13. Unauthorized Changes: In the event that the OWNER consents to, allows, authorizes, or approves of changes to any plans, specifications, or other documents, and these changes are not approved in writing by the ENGINEER, the OWNER recognizes that such changes and results thereof are not the responsibility of the ENGINEER. Therefore, the OWNER agrees to release the ENGINEER from any liability arising from the construction, use, or result of such changes.

14. Code Compliance: The ENGINEER shall put forth reasonable professional efforts to comply with applicable laws, codes and regulations in effect as of the date of the execution of this AGREEMENT and any fully executed Amendment(s). Design changes made necessary by newly enacted laws, codes and regulations after this date shall entitle the ENGINEER to a reasonable adjustment in the schedule and additional compensation in accordance with the Additional Services provisions of this AGREEMENT.

15. Information Provided by Others: The OWNER shall furnish, at the OWNER's expense, all information, requirements, reports, data, surveys and instructions required by this AGREEMENT or any fully executed Amendment(s). The ENGINEER may use such information, requirements, reports, data, surveys and instructions in performing its services and is entitled to rely upon the accuracy and completeness thereof.

16. Opinions of Probable Cost: In providing opinions of probable cost (formerly referred to as cost estimates), the Owner understands that the ENGINEER has no control over the contractor's methods of pricing, or the cost of materials and labor, and that such opinions are provided on the basis of the ENGINEER's experience and qualifications. The Engineer makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to bid or actual cost.

~~**17.** Shop Drawing Review: The ENGINEER will review the contractor's submittals for conformance with the design concept and the contract documents. The review shall be consistent with the standard of care referred to above. The ENGINEER expects each of the contractor's submittals to have been reviewed by the contractor for accuracy and completeness. The ENGINEER will either; a.) Approve the document as submitted, b.) Approve subject to resubmittal in response to comments or c.) Disapprove requiring resubmittal. The ENGINEER will give timely written notification to the OWNER if a contractor's repetitive resubmittal or failure to submit the specified materials or equipment will have an adverse impact the ENGINEER's services budget.~~

18. Indemnifications: The ENGINEER agrees, to the fullest extent permitted by law, to indemnify and hold harmless the OWNER, its officers, directors and employees (collectively, OWNER) against all damages, liabilities or costs, to the extent caused by the ENGINEER's negligent performance of professional services under this AGREEMENT and fully executed Amendment(s), and that of its sub-consultants or anyone for whom the ENGINEER is legally liable. The OWNER agrees, to the fullest extent permitted by law, to indemnify and hold harmless the ENGINEER, its officers, directors, employees and sub-consultants (collectively, ENGINEER) against all damages, liabilities or costs, to the extent caused by the OWNER's negligent acts in connection with the Project and the acts of its contractors, subcontractors or consultants or anyone for whom the OWNER is legally liable. Neither the OWNER nor the ENGINEER shall be obligated to indemnify the other party in any manner whatsoever for the other party's own negligence.

19. Professional Liability Insurance: The ENGINEER will maintain and provide evidence of Professional Liability Insurance in the amount not less than $ 250,000 covering services to be provided under this Agreement and any duly executed Amendments.

20. Insurances: Before commencing work on this contract the ENGINEER will provide certificates of insurance to show that the following minimum coverages are in effect. It is the responsibility of the ENGINEER to maintain current certificates of insurance on file with the OWNER through the term of the contract.

a. Workers Compensation: With respect to all operations performed, the ENGINEER shall carry workers compensations insurance in accordance with the laws of the State Of Vermont.
b. General Liability and Property Damage: With respect to all operations under the contract, the ENGINEER shall carry general liability insurance having all major divisions of coverage including, but not limited to:
   Premises – Operations
   Independent Contractor's Protective
   Products and Completed Operations
   Personal Injury Liability

Contractual Liability

The policy shall be on an occurrence form and limits shall not be less than:

$ 1,000,000 per Occurrence
$ 1,000,000 General Aggregate
$ 1,000,000 Products/ Completed Product Aggregate
$ 50,000 Fire Legal Liability

c. Automotive Liability: The ENGINEER shall carry automotive liability insurance covering all motor vehicles, no matter the ownership status, used in connection with the contract. Limit of coverage shall not be less than:

$ 1,000,000 Combined Single Limit.

No warranty is made that the coverages and limits listed herein are adequate to cover and protect the interests of the ENGINEER for the ENGINEER's operations. These are solely minimums that have been set to protect the interests of the OWNER.

21. Dispute Resolution: Any claim or dispute between the OWNER and the ENGINEER shall be negotiated in good faith for a period of 30 days from the date of written notice served by either party prior to exercising their rights under law.

22. Consequential Damages: Notwithstanding any other provision of the Agreement, neither party shall be liable to the other for any consequential damages incurred due to the fault of the other party, regardless of the nature of this fault or whether it was committed by the OWNER or the ENGINEER, their employees, agents, subconsultants, or subcontractors. Consequential damages include, but are not limited to, loss of use and loss of profit.

23. Electronic Files: The OWNER acknowledges that differences may exist between the electronic files delivered and the printed hard-copy construction documents. In the event of a conflict between the signed construction documents prepared by ENGINEER and electronic files, the signed or sealed hard-copy construction documents shall govern. In addition, the OWNER agrees, to the fullest extent permitted by law, to indemnify and hold harmless the ENGINEER, its officers, directors, employees and subconsultants, against all damages, liabilities or costs, including reasonable attorneys' fees and defense costs, arising from any changes made by anyone other than the ENGINEER or from any reuse of the electronic files without the prior written consent of the ENGINEER. Under no circumstances shall delivery of electronic files for use by the OWNER be deemed a sale by the ENGINEER and the ENGINEER makes no warranties, either expressed or implied, of merchantability and fitness for any particular purpose. In no event shall the ENGINEER be liable for indirect or consequential damages as a result of the OWNER's use or reuse of the electronic files. The ENGINEER will provide upon request from the State of Vermont, electronic files relating to services performed under this Agreement. Record Drawings will be provided to the State in digital format (CD).

24. Severability: Any provision of this AGREEMENT and any fully executed Amendment(s) later held to be unenforceable for any reason shall be deemed void, and all remaining provisions shall continue in full force and effect.

25. Governing Law: The OWNER and the ENGINEER agree that all disputes arising out of or in any way connected to this Agreement and any fully executed Amendment(s), its validity, interpretation and performance, and remedies for breach of contract, or any other claims related thereof shall be governed by the laws of the State of Vermont.

26. Assignment: Neither party to this AGREEMENT and any fully executed Amendment(s) shall transfer, sublet or assign any rights under or interest (including but not limited to monies that are due or monies that may be due) without the prior written consent of the other party.

27. Job-Site Safety: Neither the professional activities of the ENGINEER, nor the presence of the ENGINEER or its employees and subconsultants at a construction site, shall relieve the Construction Contractor and any other entity of their obligations, duties and responsibilities including, but not limited to, construction means, methods, sequence, techniques, or procedures necessary for performing, superintending, or coordinating all portions of the work of construction in accordance with the contract documents, and any health or safety precautions required by any regulatory agencies. The ENGINEER and its personnel have no authority to exercise any control over any construction contractor or other entity, or their employees in connection with their work, or any health or safety precautions. The OWNER agrees that the Construction Contractor is solely responsible for job-site safety, and warrants that this intent shall be made evident in the OWNER's agreement with the Construction Contractor. The OWNER also agrees that the OWNER, the ENGINEER, and the ENGINEER's consultants shall be indemnified and shall be made additional insured under the Construction Contractor's general liability insurance policy.

END OF ATTACHMENT NO. 6