

Mr. Craig Davidson
Treasurer/Administrator
Municipality of Temagami
P.O. Box 220
7 Lakeshore Drive
Temagami, ON P0H 2H0

August 16, 2021

Proposal #
04010290

Dear Mr. Davidson:

Subject: Work Plan and Cost Estimate for Hydrogeological and Surface Water Assessment at the Strathy Waste Disposal Site.

1. Background

The Strathy WDS is located 4.5 km west of Hwy 11 to the north of Milne-Sherman Road on parts of mining claims (seven claims), Township of Strathy, District of Nipissing. The site is owned by the MNRF and operated by the Municipality of Temagami under C of A No. A7249201.

Strathy WDS is at or near capacity. AECOM previously submitted on behalf of the Municipality the Design and Operation Plan to support an Environmental Compliance Approval (ECA) application to expand the site and to guide operations for the next twenty years.

A vertical expansion of 39,999 m³ of waste and daily cover was proposed. The waste footprint and final site contours have been designed to accommodate all of the existing waste area, on-site buffers and stable slopes.

The Ministry of the Environment, Conservation and Parks (MECP) provided comments and recommendations on the expansion application in an MECP Technical Memo dated March 28, 2019 which included:

- Provide a site plan labelled with surface water features, seep locations, groundwater flow direction and extent of the CAZ;
- Delineate the extent of the stream and identify where the stream runs to;
- Characterize the current impacts from landfill operations on surface waters and propose mitigation measures;
- Provide a surface water monitoring plan;
- Estimate leachate production rate; and
- Quantify the anticipated impact of landfill expansion on surface waters.

Comments and direction were also provided by the MECP in an email dated March 25, 2019 which included:

- Hydrogeological assessment is inadequate to support an expansion;
- Must include site specific hydrogeological information, monitoring program and contingency plans.

2. Scope of Work

Based on the MECP comments and recommendations AECOM is pleased to provide the following scope of work to conduct investigations and complete the hydrogeological and surface water assessment. A summary of the services requested include:

- Borehole drilling;
- Groundwater monitoring well installation;
- Site Assessment;
- Groundwater and surface water sampling and analysis; and,
- Hydrogeological and surface water assessment report.

A general summary of the work to be completed during each task and our approach to this work are provided in the following sections. This work will be completed in general accordance with the AECOM's *Standard Operating Procedures* and the following MECP guidance documents and best management practices:

- Best Practices for New Landfills - MOE Landfill Standards: A Guideline On The Regulatory And Approval Requirements for New Or Expanding Landfilling Sites (June 2010).
- Landfill monitoring program - MOE Landfill Standards: A Guideline On The Regulatory And Approval Requirements for New Or Expanding Landfilling Sites (June 2010) and Technical Guidance Document titled "Monitoring and Reporting for Waste Disposal Sites, Groundwater and Surface Water" (November 2010).
- Compliance Monitoring at Property Boundary – MOE Guideline B-7 (Reasonable Use Guideline).
- Contaminating Landfill Lifespan - Mass Balance Calculations.
- Calculation of Contamination Attenuation Zone – Small Landfill Hydrogeological Risk Assessment (MOE Northern Region, 2000) and Procedure B-7 - Determination of Contaminant Limits and Attenuation Zones.

2.1 MECP Liaison

Prior to initiating the field program AECOM will liaise with the MECP to review this proposed scope of work and confirm that they are in agreement that it is sufficient to address their previous comments and recommendations.

2.2 Field Investigation

The objectives for the field investigation are to conduct the necessary investigation to gather sufficient information regarding the site soils, groundwater and topographic conditions in order to assess the feasibility of a landfill expansion of less than 40,000 m³.

AECOM will prepare a Health and Safety Plan (HASP) prior to starting work. The HASP will include information assessing site specific hazards to protect personnel, the environment and the public while the project activities are being conducted.

All field staff will be outfitted with Personal Protective Equipment (PPE) and equipped with portable telephones or use a check in/out system, as appropriate. Personal Protective Equipment (PPE) such as rubber gloves will be changed in between well locations in order to eliminate the potential for cross contamination.

The following scope of work is proposed for the borehole drilling program:

- Conduct utility clearances to clear the locations of the proposed boreholes, prior to drilling;
- Drill 8 boreholes to a maximum depth of approximately 10 metres. Four of the eight boreholes will be advanced approximately 3 m into the underlying bedrock; and
- Install two monitoring wells at each location. The exact location of the monitor screens will be governed to some extent by stratigraphic logging results obtained while the drill holes are advanced. In general, there will be a water table (overburden) monitor at each location, and a monitor located in the shallow bedrock.

Regionally, the surficial geology in the area around the landfill site is dominated by shallow till and bedrock high outcropping as noted on the open file map 0949, Geological Survey of Canada, 1983. This map also shows an esker deposit that appears to trend towards the bedrock high that the landfill has been developed on. This geological deposition is further supported by the test pits completed in 1985 that encountered sand and gravel further to the north. The bedrock in the area is made up of mafic to intermediate metavolcanic rocks comprised of basaltic and andesitic flows, tuffs and breccias, chert, iron formation, minor metasedimentary and intrusive rocks and related migmatites within the Superior Province (MRD 126 - Revision 1, 1:250 000 Scale Bedrock Geology of Ontario - OGS).

Locally the area is dominated by a topographical high in which the landfill has been developed. This high is assumed to be the bedrock high noted on the geological maps, and drops off towards the southeast. The site is heavily forested on the east, south and west sides around the lower base of the bedrock high. The road to the site was observed (site access road) and appears to be on bedrock. Immediately north of this road there appears to be a drop-off in elevation made up of overburden.

The shallow wells will be installed at approximately 3.5 m below grade, and the bedrock wells will be installed in the upper 3 m of the bedrock, which is typically the weathered zone. There are four proposed drilling sites. The proposed sampling locations are shown on **Figure 1**. Two monitors (overburden and bedrock) are proposed at each of the proposed well locations (four of them).

Also noted from the site visit in 2013 there is a water course that trended from the northwest flowing under the site access road towards the base of the bedrock high at its northeast corner and ultimately easterly under the main access road from the area. This water course was not identified in 1985 and is also not identified on the topographic mapping for the area and the full extent is unknown.

It would not be expected that any leachate effects would occur downstream of the landfill especially at the surface water receptor (Link Lake) approximately 750 m south of the site.

With respect to the water course that was observed to the north, based on the geology (i.e. majority of flow follows the topography which drops to the south east to east) no leachate effects would be anticipated. However, there may be some potential for overland flow to the water course in the northeast corner based on the observation of the heavily stained runoff channel. It is recommended that surface water quality should be monitored in the water course for a minimum of one year to confirm that it is unaffected by the landfill and to also collect baseline data.



ACTIVE FILL AREA	0.23 ha
TOTAL LANDFILL FOOTPRINT	2.42 ha
BUFFER	11.8 ha
ATTENUATION ZONE	24.2 ha



DRAWING 1
REGIONAL PLAN



DRAWN BY: DC	SCALE: 1:5000	DATE: OCT. 2013	SHEET NO.
CHECKED BY: AutoCAD	PROJECT: TEMAGAMI WASTE DISPOSAL SITES		PROJECT NO.: 60290201

2.2.1 Drilling Methodology

Boreholes will be advanced using a drill rig. A continuous record of stratigraphy will be obtained at each well location using a 0.6 or 0.76 m long split spoon sampler. The soil core will be logged in the field by qualified AECOM staff and screened with a portable photo-ionization detector (PID). A temporary casing will be installed in the top of the bedrock in order to core the rock. The rock core will be logged in the field by qualified staff. It has been assumed that a potable water supply is not available at the site for the bedrock coring. The cost for two water loads per bedrock borehole has been carried in our proposal.

2.2.2 Soil Sampling

Soil samples will be collected from the screened interval of each well and analyzed for leachate indicator parameters¹, volatile organic compounds (VOCs), phenols, sodium adsorption ratio (SAR) and analyzed for grain size. Due to the shallow nature of the bedrock one soil sample per location has been assumed.

2.2.3 Monitoring Well Construction

Groundwater monitoring wells will be installed in the overburden (screened over the water table) and the shallow bedrock. The monitoring screens are expected to be approximately 1.5 to 3 m long. The thickness of the overburden will vary across the site based on a review of the previous test pit data.

The monitoring wells will be constructed of 50 mm diameter threaded polyvinyl chloride (PVC) well pipe with a No. 10 slotted screen interval. A filter pack consisting of No. 1 or 00 clean silica sand will be installed around the well screen from the base of each borehole to about 0.3 m above the screen interval. A 0.6 m thick bentonite pellet seal will be placed above the sand pack and the remaining borehole annular space will be filled with a low permeability bentonite grout. An above-ground protective casing will be installed over the well riser at each location.

Each groundwater monitoring well will be developed to remove any sediment within the well sand pack. The purpose of developing the well prior to sampling is to improve the water yielding capabilities of the wells and to help ensure that the sampled water is representative of the water within the geologic unit.

2.2.4 Elevation Survey

The elevations and co-ordinates of the top of the well risers and ground surface adjacent to the wells will be surveyed relative to a geodetic datum at an established benchmark and tied into the available survey information for the site.

2.2.5 Water Level Monitoring

The water levels will be measured at the prescribed frequency using an electronic water level meter. The water level probe and the lower portion of the cable will be cleaned prior to and after use at each well. The measurements will be taken from the highest point on the well riser pipe, with the water level recorded to the nearest half centimetre. Each measurement will be recorded in the field book and compared with the prior measurement for the well. The measurements will be repeated as a QC check. In addition, it is proposed that digital water level recorders be installed in each of the monitoring wells so that a continuous record of the groundwater elevations can be recorded. This data will provide valuable information on the seasonal variability of the water levels in the overburden and shallow bedrock.

1. *Schedule 5 Indicator parameter list.*

2.2.6 Groundwater Sampling

Each well will be equipped with a dedicated inertial pump assemblage system. The pump and tubing will be periodically withdrawn from the well and inspected. During the inspection, any damage to the pump/tubing, well and protective casing will be noted and Municipality will be contacted to advise what repairs are required.

Prior to purging the wells, water level measurements will be recorded at each monitoring well location. To purge the wells prior to sampling, we propose that a minimum of three well volumes (industry standard) be removed from the well. Field parameters such as pH, temperature and conductivity should be monitored and recorded following the extraction of each well volume and Waterra™ pumps (inertial pumps) is the method proposed for purging.

AECOM is proposing to collect the groundwater samples by using dedicated Waterra™ pumps (inertial pumps); however, sample collection may also involve the use of a dedicated bottom emptying bailer. The purpose for choosing this methodology is because it is time efficient and cost effective. For Volatile Organic Compounds (VOCs) sampling, it is important to minimize disturbance and turbulence in the water column during sampling which could cause a loss of volatiles. As a result, the procedure for VOC sampling involves inserting a narrow diameter tube in the Waterra assemblage and gravity draining the water in the tube directly into the sample bottle to minimize turbulence. The sample for metals will be filtered using a disposable inline cellulose based membrane filter cartridge with a pore size of 0.45 microns. Collected samples will be stored in coolers, on ice and shipped to the laboratory within 48 hours of sample collection. Samples will be accompanied by a Chain of Custody and a copy of which will be retained for our records. The groundwater samples will be analyzed for the comprehensive parameter list as outlined in Schedule 5 of the *MOE Landfill Standards: A Guideline On The Regulatory And Approval Requirements for New Or Expanding Landfilling Sites (Schedule 5 Comprehensive List)* and compared to Ontario Drinking Water Standards (ODWS).

It is proposed that five groundwater sampling events be conducted for this assessment. The first event would immediately follow the drilling program. The other four events would be scheduled based on seasonal events. Five is the minimum standard number of results required by best practices to be able to determine the background water quality for a particular location. As indicated above the parameter list for the groundwater samples will be the *Schedule 5 Comprehensive List*.

2.2.7 Surface Water Sampling

As part of this sampling, representative surface water stations should be determined and selected. Four surface water stations will be established for the monitoring program. GPS coordinates should be recorded at all stations selected along with a survey of the water course in the vicinity of the landfill.

Selected locations should cover upstream, adjacent to and downstream of the landfill footprint within the water course.

As well, during the spring freshet and/or during high rain events the runoff in the northeast corner should be checked by the landfill attendant with observations recorded. Further, any seepage around the landfill that is observed should be recorded, addressed and repaired in a timely fashion.

It is recommended that as the landfill is expanded, the downgradient/downstream area to the south east and east should be assessed yearly to confirm that no seepage breakouts are occurring.

It is proposed that four surface water sampling events be conducted for this assessment. The first event would be during the spring freshet. The other three events would be scheduled quarterly in conjunction with the groundwater sampling. The parameter list for the surface water samples will be the *Schedule 5 Comprehensive List*.

2.2.8 Quality Assurance and Quality Control

Considerable costs are being expended to collect and analyze soil and groundwater samples at the site. As a result, it is critical to have a QA/QC program in place to check on the analytical precision and accuracy, reproducibility and validity of the results and identify any outside influences (such as the introduction of VOC's into the samples due to sources not related to the landfill).

The laboratory being used for this monitoring program is a CAEAL² certified laboratory and as a result, they will complete a series of QA/QC checks including laboratory duplicates, laboratory blanks and cross referencing to laboratory standards. The sample bottles will be placed in chests with ice and delivered to the chemical laboratory for analysis. The samples will be delivered to the laboratory within 48 hours of the time they were collected, under chain of custody. More detailed QA/QC protocols will also be established for the routine monitoring programs at sites to assess the reliability of the laboratory results in terms of the following analytical precision and accuracy, the potential for background effects from the laboratory environment, the potential for background effects from the sampling equipment and the efficiency of the chemical procedure.

To establish quality assurance/quality control for groundwater laboratory analyses, AECOM proposes to collect "blind duplicate" field samples. In general, 1 blind duplicate and/or VOC trip blank for every 10-15 field samples collected. The blind duplicates will also be analyzed for the complete suite of analytical parameters. The trip blanks and trip spikes will only be analyzed for VOCs. Standardized analytical methods are used so that the results of the chemical analyses can be compared with applicable guideline criteria.

2.2.9 In situ Hydraulic Conductivity Testing

After the first sampling event has been completed and the water levels in the monitors return to static levels hydraulic conductivity testing will be performed at each well by inserting a solid slug of a known volume and monitoring the water level recovery over time (i.e., falling head slug test). Subsequently, the slug will be removed and the water level recovery will be monitored over time (i.e., rising head slug test). The tests will be terminated when the cumulative recovery of each well reaches approximately 70% of the difference between its static water level and its initial water injection or drawdown level.

2.3 Boundary and Attenuation Zone Impact Assessment

Also we will determine, identify and comment upon:

- Anticipated contaminating life span;
- Anticipated critical leachate contaminants;
- Anticipated chloride source function;
- Anticipated chloride migration (horizontal and vertical);
- Predicted Vertical pathway through existing bedrock; and
- Predicted boundary / attenuation zone impact.

Based on the results of the field investigation work and our knowledge of similar natural attenuation landfills, we will calculate an estimate for the contaminating life span of the landfill. We will review the soil chemistry and groundwater quality in conjunction with other similar landfill data to determine the Leachate Indicator Parameters for this site.

2. CAEAL = Canadian Association for Environmental Analytical Laboratories

For natural attenuation landfills, an assessment of chloride concentrations is typically completed as part of the landfill design. This is because chloride is usually present in elevated concentrations in landfill leachate, is relatively conservative in groundwater, and can only be attenuated by dilution. As such, it is a representative contaminant at the leading edge of the contaminant plume. Groundwater flow directions and vertical and horizontal gradients established from the groundwater level monitoring program will be used to predict vertical and horizontal groundwater flow pathways. Groundwater contour maps will be prepared to aid in determining the direction of groundwater flow. Although the background documents indicate that the regional groundwater flow direction is towards the Kabinakagami River, local groundwater flow will be governed by the topography of the site and the bedrock surface. Leachate, including chloride, will be transported along the groundwater flow path(s). The results of the drilling program and slug testing will help identify whether this transport will be along the overburden/bedrock interface. All of this information will then be used in the chloride dilution calculation.

This Landfill will rely on natural attenuation to reduce concentrations of leachate derived constituents in the adjacent groundwater and surface water. In such a situation, an estimate of the required attenuation zone downgradient of the landfill is typically made based on dilution calculations. Other attenuation mechanisms also act to reduce concentrations but typically these are not included in the determination to offset uncertainties inherent in the assumptions used for the calculations. For example, this approach assumes complete mixing throughout the downgradient groundwater system, which does not actually occur. For the calculations, an estimate of the annual leachate production is required and a representative parameter (or parameters) selected. We will determine the representative parameter (or parameters) to select based on a review of the background water chemistry acquired from the groundwater monitoring program.

2.4 Reporting

The reporting for the hydrogeologic and surface water assessments will review the geologic, topographic and physiologic setting for the Site, the results of the conductivity testing and the groundwater quality in the buffer zone and surface water quality to determine compliance with the MECP requirements. We will identify the environmental regulatory requirements and permitting requirements associated with any proposed recommendations contained within the study along with measures to mitigate said impacts. The reporting will also incorporate proposed surface and groundwater monitoring programs and contingency plans.

3. Schedule

A Site visit would be proposed in October 2021 for the establishment of the surface water stations and confirmation of monitoring well placement. The drilling would be proposed in Spring 2022 along with the spring freshet surface water sampling and then quarterly sampling would continue throughout 2022. Following the collection and assessment of the data from 2022 the draft Hydrogeological and Surface Water Assessment Report will be prepared by January 31, 2023 for review. A final report will be issued within 10 business days of receipt of one set of consolidated comments from the Municipality.

4. Costing

The budget cost estimate for the scope of work described herein is \$119,578 plus HST consisting of \$58,725 in fees and \$60,853 in disbursements. The breakdown for the disbursements is as follows:

Drilling Contractor	\$27,030	
Laboratory Fees	\$24,090	
Expenses (equipment rental, filters, travel etc.)		\$9,460

The estimate for this project was developed and is based on AECOM's current understanding of client objectives, the work program developed to achieve those objectives, and the level of effort required to implement the proposed options. If Site conditions determined through investigation are significantly different than those presumed based on expertise and historical information, the scope of work and cost estimate are also subject to change. Due to the potential for unknowns or site conditions to be different for this scope of work a 15% contingency is recommended. With contingency the cost estimate would be approximately \$137,515 (excluding HST).

The following was assumed in developing this scope of work and associated cost estimate:

- Any path clearing requirements for drilling access will be confirmed during the site visit, and the costs associated with path clearing have been excluded from this estimate. It is noted that AECOM assumed site visit, locates and sampling will be conducted during regular business hours (8:00 a.m. to 5:00 p.m.).
- The laboratory soil and ground water analysis will be carried out with standard turnaround time (TAT), rush analysis / TAT would be at an additional cost.

5. Closing

This assessment is the first step in determining the feasibility of an expansion at this site. One possible outcome of the assessment is that additional monitoring wells are required as the groundwater flow regime is more complex than originally believed. The purpose of the assessment is to confirm that the landfill is not having a significant environmental impact on the surrounding area. Another outcome of the assessment is although the impacts are mitigatable, the mitigation required is costly. Given this is a naturally attenuating WDS, costly mitigation measures would mean that an expansion would not be recommended.

Thank you for considering AECOM for this work. Should you wish AECOM to proceed with this work please sign the attached professional service agreement and return to Marie Wardman via email.

Please feel free to contact Marie Wardman directly should you have any questions.

Sincerely,
AECOM Canada Ltd.



Bruce Noble, P. Eng.
Vice President,
Remediation, Environment
Bruce.noble@aecom.com



Marie Wardman, P. Eng.
Senior Geological Engineer,
Operations Manager, Environment
Marie.wardman@aecom.com

MM:mew
Encl. Professional Services Agreement
cc: Chris Stilwell, Tulloch

Professional Services Agreement

THIS AGREEMENT, made effective as of August 16, 2021,

BETWEEN: Municipality of Temagami
P.O. Box 220
7 Lakeshore Drive
Temagami, ON P0H 2H0
Attention: Mr. Craig Davidson
(herein called "Client")

AND: AECOM Canada Ltd.
105 Commerce Valley Dr W. , Markham, ON L3T
Attention: Mr. Spencer Bootsma
(herein called "AECOM")

AECOM Project Name: Hydrogeological and Surface Water Assessment at the Strathy Waste Disposal Site.

WHEREAS Client has requested AECOM to perform the professional services set forth herein and AECOM has agreed to perform such services on and subject to the terms and conditions contained herein;

NOW THEREFORE, in consideration of the mutual promises contained herein, it is hereby agreed as follows:

Article I – Project

AECOM will perform the professional services set out in Article II hereof in connection with the following project (the "Project"):

As defined in AECOM proposal dated August 16, 2021 and entitled: **Work Plan and Cost Estimate for Hydrogeological and Surface Water Assessment at the Strathy Waste Disposal Site**

Article II – Scope of Services

The professional services to be provided by AECOM hereunder shall consist of the following (the "Services"):

See proposal referenced above

Article III – Compensation

Client agrees to pay to AECOM the following fees, expenses and disbursements as compensation (the "Compensation") for providing the Services:

See proposal referenced above

Article IV – General Conditions

AECOM shall provide the Services in accordance with and subject to the General Conditions attached hereto as Schedule "A".

Article V – Supplemental Conditions

The following Supplemental Conditions, *if any*, shall also form part of this Agreement:

None

Professional Services Agreement

Municipality of Temagami

August 16, 2021



Article VI – Notices

Unless otherwise prescribed by law or stipulated herein, all notices required by this Agreement to be given by either party shall be made in writing and shall be deemed to be properly given and received on the date of delivery if delivered by hand or within 2 days of transmission if transmitted to the other party by facsimile or registered mail, addressed to the address of such other party as set forth herein.

Article VII – Governing Law

This Agreement shall be deemed to have been made in the place where AECOM's address as set forth herein is located, and its provisions, interpretation and performance shall be governed by the laws of such place (the "Governing Law"). The parties agree that if certain terms and conditions are required by the Governing Law, that this Agreement shall be deemed to have and hereby does incorporate such terms and conditions herein by reference.

Article VIII – Severability and Survival

If any of the provisions contained in this Agreement are held illegal, invalid or unenforceable, the other provisions shall remain in full effect. Limitations of liability set forth herein shall survive termination of this Agreement for any cause.

Article IX – Entire Agreement

This Agreement, together with any Supplemental Conditions and documents noted below, if applicable, and the Schedule(s) attached hereto, constitutes the sole and entire agreement between Client and AECOM relating to the Services, and supersedes all prior agreements between them, whether written or oral, respecting the subject matter hereof, and no other terms, conditions, warranties or guarantees, whether express or implied, shall form a part hereof. If Client issues a Purchase Order in connection with the Services, any terms and conditions contained in such Purchase Order do not apply to this Agreement. This Agreement may be amended only by written instrument signed by both Client and AECOM.

Article X – Additional Documents

AECOM proposal dated August 16, 2021 and entitled: **Work Plan and Cost Estimate for Hydrogeological and Surface Water Assessment at the Strathy Waste Disposal Site**

Article XI – Assignment

This Agreement shall enure to the benefit of and be binding upon the parties, their executors, administrators, successors and permitted assigns. Neither party may assign this Agreement without the written consent of the other provided, however, that AECOM shall be entitled, in its discretion and at any time, to assign this Agreement to any of its subsidiaries or affiliates upon written notice to Client and to engage subconsultants to perform all or any part of the Services.

IN WITNESS WHEREOF the parties have executed this Agreement.

Municipality of Temagami

AECOM Canada Ltd.

Per: _____
Signature Authorized Representative

Per: _____
Signature of Authorized Representative

Print Name of Authorized Representative

Print Name of Authorized Representative

Date

Date

Schedule "A" General Conditions of Professional Services Agreement

1. **Client's Responsibilities.** Unless otherwise agreed to by AECOM in writing, Client shall do the following in a timely manner so as not to delay the Services:

- a) Provide AECOM with all information in its possession or control relating to the Services to be performed and, if applicable, the site(s) for the Project (the "Project Site"), including without limitation all information pertaining to hazardous materials which may exist at the Project Site and details of any underground or concealed utilities, services or other hidden obstructions. Client acknowledges that AECOM shall be entitled to rely upon full disclosure by Client of the foregoing information to enable AECOM to properly perform the Services. AECOM shall not be responsible for any incorrect advice, judgement, recommendation, finding, decision or conduct based upon any inaccurate or incomplete information supplied by Client and Client shall defend, indemnify and hold AECOM harmless from and against any claim, loss or damage resulting therefrom.
- b) Where applicable, grant or arrange timely and unobstructed access to the Project Site for all equipment and personnel of AECOM required to perform the Services. AECOM will take reasonable precautions to minimize damage to the Project Site but it is understood by Client that, in the normal course of events, damage to or at the Project Site, including without limitation damage to underground or concealed utilities or services, may occur. The correction of such damage is not part of the Services unless agreed to in writing by AECOM and, provided AECOM has taken the precautions mentioned above, any such restoration of the Project Site will only be undertaken by AECOM at additional cost.
- c) When required by AECOM, engage subconsultants directly to perform services necessary to enable AECOM to carry out its duties and responsibilities as set forth in Article II of this Agreement. Such subconsultants engaged by Client shall be subject to the joint approval of Client and AECOM.
- d) Obtain any required approvals, licenses, permits or related documents so as not to delay AECOM in the performance of the Services.
- e) Give prompt consideration to all reports and other documents relating to the Services furnished by AECOM and, whenever prompt action is necessary, inform AECOM in writing of its decisions in such reasonable time so as not to delay the Services or to prevent AECOM from forwarding instructions to its subconsultants in good time.

2. **Field Services.** Any field services recommended by AECOM for the Project are the minimum necessary, in the sole professional discretion of AECOM, to observe whether the work (the "Work") of any contractor retained by Client ("Contractor") is being carried out in general conformity with the intent of the Services. Any reduction from the level of field services recommended will result in AECOM qualifying any certifications it provides for the Work. Field services are rendered for the benefit of Client, not Contractor.

3. **Responsibility for Work.** Contractor alone is responsible for the quality control of the Work, for construction means, methods,

techniques, sequences and procedures, for the direction of construction personnel, selection of construction equipment and coordination of subcontractors, for safety precautions and programs and for placing into operation any plant or equipment and for failure to perform the Work in accordance with the construction contract.

Where the Services include field services, AECOM will consult with and advise Client and will serve as Client's professional engineering representative in carrying out the Project. AECOM is hereby granted authority as agent of Client to disapprove or reject any of the Work which AECOM may observe or discover does not conform to the construction contract. All of Client's instructions to Contractor will be issued through AECOM as Client's agent, who will have authority to act on behalf of Client to the extent provided by the terms of the construction contract.

Where the Services do not include field services, or the level thereof recommended by AECOM, AECOM shall have no responsibility for the consequences of any defects in its design if normally accepted field services could have reasonably been expected to identify such defects during the performance of the Work.

Neither acceptance nor approval by AECOM of the Work, whether express or implied, shall relieve Contractor from its responsibilities to Client for the proper performance of such Work.

4. **Financial Estimates/Opinions.** Any cost estimates or opinions regarding profit, return on capital or other economic returns provided by AECOM represent AECOM's professional judgement in light of its experience and the knowledge and information available to it at the time of preparation. Since AECOM has no control over market or economic conditions or bidding procedures, AECOM, its directors, officers and employees are not able to make any guarantees or warranties whatsoever, whether express or implied, with respect to such estimates or opinions and accept no responsibility for any loss or damage arising therefrom or in any way related thereto. Persons relying on such estimates or opinions do so at their own risk.

Except as required by law, any report containing such estimates or opinions is for the private and sole use of Client and is to be treated as confidential by Client, its directors, officers and employees and is not to be made available to others without the prior written consent of AECOM.

5. **Building Codes and Bylaws.** AECOM will endeavour to obtain from the appropriate authorities their interpretation of applicable Building Codes and Bylaws and will, to the best of its ability, interpret Building Codes and Bylaws as they apply to the Project at the time of design, but it is expressly acknowledged and agreed by Client that as the Project progresses, the Building Codes and Bylaws may change or their interpretation by any public authority may differ from the interpretation of AECOM, through no fault of AECOM, and any extra cost necessary to conform to such changes or interpretations during or after execution of the Work will be paid by Client.

6. **Materials and Samples.** Any items, substances, materials or samples removed from the site for testing, analysis, or other evaluation will be returned to the site unless otherwise agreed to by the parties in writing. Client recognizes and agrees that AECOM is acting as a bailee and at no time assumes title to said items, substances, materials or samples.

Professional Services Agreement

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7. **Documents.** Unless otherwise agreed to by the parties in writing, all of the documents (including without limitation drawings and specifications and electronic or digital data) prepared by or on behalf of AECOM in connection with the Project (the "Documents") will become the property of Client upon full and final payment of the Compensation but the copyright in and to the Documents shall be retained by AECOM. AECOM grants to Client a non-exclusive right and licence to use, disclose and reproduce the Documents solely for the purpose of the Project.

Client shall not use, permit the use of, disclose or reproduce any of the Documents for the construction of another project or work, or in any way amend, alter or revise the Documents, without first obtaining the written consent of AECOM, and all reproductions shall include notice of this restriction.

AECOM shall have no responsibility for any loss or damage suffered by Client or others resulting from any unauthorized use or modification of the Documents, errors in transmission of the Documents, changes to the Documents by others, the consequences of design defects due to the design of others, or defects in contract documents prepared by others, and Client agrees to defend, indemnify and hold AECOM harmless from and against all claims, demands, losses, damages, liability and costs associated therewith. Subject to the foregoing provisions, the Documents may be relied upon by Client for design and construction work undertaken by other parties with respect to the Project provided such parties verify the accuracy and completeness of the Documents to their satisfaction.

Unless otherwise agreed to by the parties in writing, in the event that Client is in default of its obligations under this Agreement, AECOM may terminate Client's right and licence to use, disclose and reproduce the Documents upon providing written notice to Client, whereupon Client shall return to AECOM all Documents, including all media containing Documents transmitted to Client in electronic or digital form, and ensure that all Documents in electronic or digital form are erased from all memories of Client's computers or information storage devices and from all memories of computers or information storage devices belonging to other persons or legal entities to whom the Documents have been disclosed by Client, and that no residual copies of any part of any Documents are retained by any of them. At the request of AECOM, Client shall provide a certificate of a senior officer certifying Client's compliance with this clause.

AECOM, in developing solutions, testing hypotheses, or documenting designs, may employ advanced technologies for simulation, information modeling, generative design, and the development of project documentation (the "Technical Tools"). While the Technical Tools may result in digital files and/or simulations or models (the "Datasets"), when not specifically defined within this Agreement, the Datasets will not constitute a Document or portion thereof. Rather, the Technical Tools and the Datasets will be a by-product of AECOM's internal processes and shall be AECOM's sole proprietary information. Notwithstanding anything to the contrary in this Agreement, any ownership and data rights provision will not apply to the Technical Tools and the Datasets and AECOM shall remain the sole owner of such Technical Tools and Datasets.

8. **Confidentiality.** AECOM shall use reasonable efforts to keep confidential all data and information which is marked confidential and furnished to AECOM by Client under this Agreement. AECOM's confidentiality obligations shall not apply if such data or information is within the public domain, previously known to AECOM, obtained by AECOM from third parties without violating

any confidentiality agreement or required to be produced by AECOM pursuant to any law, subpoena or court order.

9. **Personal Information.** Unless otherwise agreed to by the parties in writing, Client shall only collect and use individually identifiable information from or about AECOM employees, such as salary information, ("Personal Information") if such collection and use is directly required for the fulfillment of the terms of this Agreement. Client shall collect and use all Personal Information in accordance with applicable federal or provincial personal information protection legislation.

If requested to do so by AECOM, Client shall provide AECOM with particulars regarding its collection and use of Personal Information.

Client shall use appropriate security measures to protect Personal Information and shall not directly or indirectly disclose, allow access to, transmit, or transfer Personal Information to a third party, or copy, modify or dispose of Personal Information, without AECOM's prior written consent. Should any unauthorized disclosure, access, transmission, transfer, copying, modification or disposal of Personal Information occur, Client shall immediately inform AECOM's Privacy Officer at privacyofficer@aecom.com of the details of the occurrence.

Upon termination or expiration of this Agreement, Client shall immediately deliver up to AECOM, at Client's own expense, or render anonymous, at Client's own expense, all Personal Information in its possession, charge, control, or custody.

10. **Fees.** When the fee basis of the Compensation is AECOM's Per Diem Rates, such rates are those hourly or daily rates charged for work performed on the Project by AECOM employees of the indicated classifications. These rates are contained in ARTICLE III - COMPENSATION and are subject to annual calendar year adjustments.

All sales, use, value added, business transfer, gross receipts or other similar taxes will be added to AECOM's fee when invoicing Client.

11. **Payments to AECOM.** A monthly invoice ("Invoice") will be issued by AECOM for all Services performed under this Agreement. Except as set forth below, Client shall pay each Invoice within 30 days from its receipt without holdback. An Invoice shall include the date of issuance; the invoice period for the Services; the amount due as payable; the authority for the Services (this Agreement or otherwise); the applicable payment terms; and the contact information for the payment recipient, including name, title, telephone number and mailing address. Interest at a rate of 15% per annum or the maximum rate allowed by law, whichever is lower, will accrue on all overdue amounts.

In the event of a disputed billing, only the disputed portion will be withheld from payment, and the undisputed portion will be paid. Client will exercise reasonableness in disputing any Invoice or portion thereof. Interest at the rate of 15% per annum or the maximum rate allowed by law, whichever is lower, will accrue on any payable funds not paid when due following resolution of a previously disputed sum.

Client shall use commercially reasonable efforts to facilitate payments to AECOM using an Electronic Funds Transfer method.

If Client fails to make payment of any sum due hereunder, AECOM may, after giving 7 days' written notice to Client, suspend the Services until all such sums have been paid in full to AECOM.

12. **Changes.** Client may make or approve changes within the general scope of the Services provided written notice of such

changes is given to AECOM. If such changes affect AECOM's cost of or time required for performance of the Services, an equitable adjustment of the Compensation or of the term hereof will be made through an amendment to this Agreement.

13. Force Majeure. Neither party shall be responsible for a delay or disruption in, or inability to provide its respective performance under this Agreement, other than a delay in payment for Services already performed, if such delay is caused by events or contingencies, existing or future, beyond the reasonable control of the claiming party, including "acts of God," abnormal weather conditions or other natural catastrophes, war (whether declared or not), terrorism, sabotage, computer viruses, riots, strikes, lockouts or other industrial disturbances, pandemics, epidemics, health emergencies, virus (e.g., SARS Cov-2), disease (e.g. COVID-19), plague, quarantine, travel restrictions, discovery of hazardous materials, differing or unforeseeable site conditions, changes in law or regulations, acts of governmental agencies or authorities (whether or not such acts are made in response to other Force Majeure events), or any other events or circumstances not within the reasonable control of the party affected, whether or not of a similar kind or nature to any of the foregoing (a "Force Majeure Event"). The party seeking application of this provision shall notify the other party in writing promptly upon learning of the impact of the Force Majeure Event upon the notifying party's performance of its obligations under this Agreement. Upon the occurrence of a Force Majeure Event, AECOM shall be entitled to an equitable adjustment to the project schedule and compensation sufficient to compensate AECOM for any increase in the time or costs necessary to perform the Services under this Agreement. Should a Force Majeure Event substantially prevent or be reasonably likely to substantially prevent AECOM's performance of the Services for more than 30 days, then AECOM shall be entitled to terminate this Agreement without breach. In case of such termination, AECOM shall be entitled to the Compensation for those Services performed as of the date of termination.

14. Standard of Care. The standard of care applicable to the Services will be the degree of care, skill and diligence normally employed by professional engineers or consultants performing the same or similar services at the time and place that the Services are performed.

15. Insurance.

- a) AECOM shall maintain throughout the term of this Agreement Professional Liability Insurance with per claim and annual aggregate limits which it deems to be reasonable, insuring AECOM's professional liability resulting from the performance of the Services. AECOM shall provide Client with proof of such insurance upon written request.
- b) As between AECOM and Client, Client assumes sole responsibility and waives all rights and claims against AECOM for all loss of or damage to property owned by or in the custody of Client and any items at the site or in transit thereto (including without limitation construction work in progress) however such loss or damage shall occur, including the fault or negligence of AECOM. Client agrees to maintain appropriate Property Insurance and shall require its insurers to waive all rights of subrogation against AECOM for claims covered under any Property Insurance that Client may carry. Such waivers shall survive termination or discharge of this Agreement. If Client purchases, or causes Contractor to purchase, a Builders All Risk or other Property Insurance policy for the Project, Client shall require that AECOM be included as a

named insured on such policy without liability for the payment of premiums.

Client shall require Contractor to include Client and AECOM as additional insureds on its General Liability Insurance policy (such policy to be primary and non-contributing). Further, Client shall obtain from Contractor and maintain for the benefit of AECOM the same indemnities and other insurance benefits obtained for the protection of Client, and shall provide to AECOM insurance certificates evidencing the required coverages.

16. Limitation of Liability. AECOM's liability to Client for claims arising out of this Agreement, or in any way relating to the Services, will be limited to direct damages and to the reperformance, without additional compensation, of any Services not meeting the standard set forth in General Condition 14 and such liability will, in the aggregate, not exceed the lesser of the amount of our fees or \$100,000.

In no event will AECOM be liable for indirect or consequential damages including without limitation loss of use or production, loss of revenue, loss of profits or business interruption nor will it be responsible for the failure of Contractor to perform the Work.

No claim may be brought against AECOM more than 1 year after the Services were last performed under this Agreement; provided, however, that if (and only if) the shortest limitations period for claims under the Governing Law is greater than 1 year and the Governing Law does not permit the parties to reduce that limitations period by contract, no claim may be brought against AECOM after the limitations period prescribed by the Governing Law expires.

The limitations of liability contained in this General Condition will apply, to the extent permitted by law, whether AECOM's liability arises under breach of contract or warranty; tort, including negligence; strict liability; statutory liability; or any other cause of action, and will extend to and include AECOM's directors, officers, employees, insurers, agents and subconsultants.

These provisions take precedence over any conflicting provisions of this Agreement or any document incorporated into it or referenced by it.

17. Third Party Beneficiaries. This Agreement gives no rights or benefits to anyone other than Client and AECOM and has no third party beneficiaries except as provided in General Condition 16.

18. Termination. This Agreement may be terminated for convenience by either party on 30 days' written notice or if either party fails substantially to perform through no fault of the other and does not commence correction of such non-performance within 5 days of written notice and diligently complete the correction thereafter. On termination, AECOM will be paid for all authorized work performed up to the termination date plus reasonable termination expenses including without limitation reassignment of personnel, subconsultant termination costs and related close-out costs. AECOM shall be allowed a reasonable period of time to complete such records as are considered necessary by AECOM to place its files in order to protect its professional reputation and/or limit its legal liability.

19. Non-Solicitation. Client shall not, directly or indirectly, during the term of this Agreement or for a period of 1 year thereafter, without the prior written consent of AECOM, actively solicit or offer employment to any employee of AECOM who has been engaged in providing, or associated with, the Services.

Professional Services Agreement

Municipality of Temagami

August 16, 2021

- 20. Representatives.** Each party shall designate a representative who is authorized to act on behalf of such party and to receive notices under this Agreement.
- 21. Dispute Resolution.** Upon the written request of either party, the parties shall attempt to resolve all disputes arising out of or in connection with this Agreement, or in respect of any defined legal relationship associated with it or from it, by structured negotiation, on a without prejudice basis, with the assistance of a mediator appointed by them. If a dispute cannot be settled within a period of 30 days after such request, or such longer period as may be agreed to by the parties, the parties shall be free to pursue any other procedures or remedies available to them, including arbitration or litigation, in an effort to finally resolve the dispute. Any party's participation in the process herein is not to be construed as acknowledgement of a right to, or an agreement for, any party to refer the dispute to a statutory adjudication process, if applicable.

