



**The Corporation of the Municipality  
Staff Report**

**Office of the Treasurer**  
Manuela Batovanja

<b>Prepared For: Mayor and Council</b>	<b>Report No.: 2022-04</b>
<b>Agenda Date: June 21, 2022</b>	<b>File No.: C-11</b>

### **Purpose of Report**

The purpose of this report is to obtain Council's approval regarding the selection of a consultant for the completion of the Long-Term Financial Plan project.

### **Analysis**

As detailed in the 2022 Capital Budget a commitment was made to develop a Water and Wastewater Master Plan for the Municipality. A request for proposal was issued identifying tasks to be completed and project deliverables which included but were not limited to:

1. Assessment of existing infrastructure and needs review
2. Baseline model development, calibration and validation;
3. Develop and evaluate growth scenarios
4. Identify the preferred Water and Wastewater Servicing design alternatives and solutions

The review and evaluation committee consisted of the CAO, the Director of Community Services and Treasurer. Review criteria included:

1. Experience and Qualifications
2. Approach and Understanding
3. Project Control/Schedule
4. Budget

We received three responses to our Request for Quotation:

1. Burnett & Associates Ltd.
2. Tulloch Engineering Inc.
3. Kresin Engineering Corporation

**Respectfully Prepared and Submitted By:**  
**Manuela Batovanja, Deputy Treasurer**  
**Assistant Director of Corporate Services**

Having applied the criteria identified in the review and evaluation it was the determination of the selection committee that the project be awarded to S. Burnett & Associates Limited.

### **Recommendation**

It is the recommendation of the selection committee to accept the proposal submitted by S. Burnett & Associates Limited for the development of a Water and Wastewater Master Plan for the Municipality of Wawa for the price of \$139,755.98 plus HST. The approved budget for this project is \$150,000.

### **Attachments**

S. Burnett & Associates Limited Proposal, Municipality of Wawa RFP 2022-01:  
Wawa Water and Wastewater Master Plan.



**S. BURNETT**  
**& ASSOCIATES LIMITED**  
ENGINEERING & ENVIRONMENTAL



# Municipality of Wawa

## Water and Wastewater Master Plan

### Technical Proposal



June 3, 2022



Municipality of Wawa  
PO Box 500 40 Broadway Avenue  
Wawa, ON P0S 3 1K0

**Attn:** Rebecca Weatherall, Assistant Director of Infrastructure

**Re:** Municipality of Wawa, Water and Wastewater Master Plan  
Technical Proposal  
SBA File No: M22019

Dear Rebecca,

S. Burnett & Associates Limited (SBA) is very excited about the opportunity to submit this proposal to provide engineering consulting services to assist in the development of the Municipality of Wawa's Water and Wastewater Master Plan.

SBA is an established consulting firm that has quickly build a record for delivering strong project management, sound municipal infrastructure designs, and has extensive Environmental Assessment (EA) and consultation experience for Municipalities and First Nation communities across Ontario, with significant experience in Northern Ontario. Our senior staff have extensive experience completing Master Servicing Plans, Municipal Class EAs, Federal EAs and Capital Planning Studies. Since 2015, SBA has been retained as the Municipal Engineer for the Town of Shelburne, during which we have completed three (3) Master Plans for water, wastewater and linear works and currently are undertaking a stormwater master servicing Plan project. SBA has also completed near-identical planning exercises for First Nation communities across Ontario. These Capital Planning and Infrastructure Feasibility Studies follow the same process as a municipal master servicing plan and are completed for identical infrastructure in First Nation communities, including water and wastewater infrastructure. Through our work completing these projects with over fifty (50) First Nation communities, SBA has developed unique stakeholder and community consultation process that have benefited our municipal and First Nation clients, and this is reflected in our workplan.

SBA is not your standard engineering firm, in fact, we would not exist if our associates were satisfied by the standard management and customer service practices in engineering. We are an innovative and "out of the box" thinking firm that has put customer service back as the first priority in developing solutions for our clients. Stephen Burnett, SBA's Principal and the assigned Project Manager for this project has led over 20 Municipal Class EAs and Federal EAs. Additionally, SBA has a local engineer, residing permanently in Wawa so our team is right there to help if needed. This local resource will be available in-person for all meetings and is available to collect the necessary background information or complete additional site reviews as needed to make this project a success.

Please find our proposal enclosed for your review and consideration. We look forward to showing you and your community why so many northern communities have chosen SBA to assist them through these important servicing projects. Should you have any questions, please do not hesitate to contact us.

Yours truly,

A handwritten signature in blue ink, appearing to read 'Stephen Burnett', written over a light blue circular stamp.

Stephen Burnett, P.Eng.  
Principal

**S. Burnett & Associates Limited**

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## 1. Introduction

This proposal has been prepared based on the scope of work as presented in the Request for Proposal (RFP), dated April 9, 2022, Addendum No. 1, issued May 19, 2022 and Addendum No. 2 dated May 27, 2022.

The Municipality of Wawa (also referred to as the Municipality) is located within the District of Algoma and comprises the Town of Wawa and the Michipicoten River village (the Mission). The Municipality encompasses an area of about 480 square kilometers, has an approximate population of 3,000 people and the local economic activities include mining, forestry and tourism. In order to plan for community growth, long-term development and infrastructure maintenance, the Municipality has a necessity for a Water and Wastewater Master Plan that forecasts to 2032.

The objectives of the Water and Wastewater Master Plan include the following:

1. Identify a water and wastewater servicing strategy for future growth and existing infrastructure
2. Use available information to ensure growth build-out scenario recommendations and preferred alternatives for the 2032 horizon align with existing and ongoing Municipal initiatives and population projections
3. Utilize asset condition information to identify refurbishment and replacement projects to maintain existing levels of service
4. Complete the Water and Wastewater Master Plan using the Municipal Engineers Association's Municipal Class Environmental Assessment process including Public Information Centers where required
5. Include all of the Municipality's latest information including but not limited to, population forecasts, planning information, past flow and demand data, asset management and condition data in the Water and Wastewater Master Plan

In conjunction with the Water and Wastewater Master Plan, the Municipality is implementing additional initiatives including:

- Community Strategic Plan
- Municipal Business Plan
- Municipal Asset Management Plan
- Community Energy Plan
- Wawa Drinking Water System Financial Plan
- Official Land Use Plan
- Zoning By-Law
- GIS Data
- Drinking Water Quality Management System

### 1.1 Firm Introduction

S. Burnett and Associates Limited (herein referred to as SBA) is an established consulting firm that has quickly build a record for delivering strong project management, sound infrastructure detailed designs, Environmental Assessments and consultation services for Municipalities and First Nation communities across Ontario. SBA is in the business to seamlessly manage

projects - minimizing our clients' headaches by proactively assessing risk, managing issues, and maximizing resources.

SBA has extensive project management expertise, having overseen both large- and small-scale Municipal and First Nation infrastructure projects since our inception in 2009. Most notable this includes acting as Municipal Engineers to the Town of Shelburne since 2015 which has included Master Plans and Municipal Class Environmental Assessments. The Town of Shelburne is considered a small municipality that is experiencing significant growth and was the fastest growing community at the last census. Over the past seven (7) years SBA has been involved in community planning initiatives and assisting the Town with all of their servicing initiatives. We have developed schedule and cost control procedures for our project managers including a powerful invoicing tool as well as maintaining project status reports.

SBA also acts as the Municipal Engineer for the Township of Emo in Northern Ontario and has completed a Water & Wastewater Master Servicing plan for the Township as well as the corresponding Schedule C EA's for the WTP upgrades and the Sewage facility upgrades. SBA has also assisted Emo with the expansion of their water distribution system which was experiencing significant bottlenecks, chlorine residual issues and low pressure and fire flow conditions. SBA's extensive hydraulic modeling experience helped to immediately identify the critical bottlenecks in the system created by minimal River crossings, CN Rail crossings and MTO Hwy 11 crossings. SBA assisted the Town in designing, permitting and approvals for these critical crossings to improve the system performance. SBA assisted the Town in securing over \$9 M in infrastructure funding through MIII, SCF and CWWF funding and has resolved all of the water distribution bottlenecks, residual issues and pressure and fire flow issues throughout town.

SBA has significant experience assessing and designing water and wastewater infrastructure for remote communities. Through our vast experience in Northern Ontario, we understand the challenges that remote communities face and are committed to implementing recommendations that will remove headaches that some municipalities experience to improve the reliability of performance.

We understand that water and wastewater systems of this capacity have unique features in terms of operation and maintenance, resource availability and support. SBA seeks to implement optimization strategies and design best practices to improve process efficiency and mitigate issues experienced with operation. With a focus on the most stringent provincial and federal standards and guidelines, our goal is to ensure our recommendations and design strategies align with the needs of the community while providing the most robust solutions to meet your long-term needs.

In addition to our experience undertaking Master Plans and Municipal Class EAs for Municipalities (as outlined in **Appendix B**), SBA has also completed near-identical planning exercises for First Nation communities across Ontario. These Capital Planning and Infrastructure Feasibility Studies follow the same process as a municipal master servicing plan and are completed for all infrastructure in First Nation communities, including water and wastewater infrastructure. Specifically, these planning exercises look at alternatives for serviceability over the short, mid, and long terms (20+ years), with considerations given to economic, social and environmental impacts of different alternatives. These exercises similarly require community consultation, such as Public Information Centres, surveys and newsletters. Through our work completing these projects with over fifty (50) First Nation communities, SBA has developed unique stakeholder and community consultation process that have benefited our municipal and First Nation clients, and

this is reflected in our workplan. SBA staff are proud of our ability to communicate what are sometimes complex technical details to all affected stakeholders and to ensuring that all levels of stakeholders, including operations staff, are involved in the assessment process. Also, with most of these communities being located in Northern Ontario, SBA has further developed our approaches to design and construction, ensuring they are sound, feasible and applicable in more northern and remote climates. Our successful community consultation methods and experience range from interactive public information centres to community-focused visioning and goal setting sessions. In addition to stakeholder and community consultation, SBA finds benefit in discussing current infrastructure issues with operators and we continue to build these relationships for the duration of our projects.

In addition to our water, wastewater and master planning experience, SBA staff also have expertise in:

- Comprehensive Community Strategic Planning
- Business Plan development
- Asset Management Planning and management
- Community Energy Planning and renewable energy projects
- Drinking Water System Financial Planning
- Official Land Use Planning
- GIS data management
- Drinking Water Quality Management
- Stormwater management planning and modeling

Lastly, our SBA team has a strong technical background delivering comprehensive technical designs related to hydraulic modeling using industry standard software that have helped to identify water distribution system deficiencies in which the results of these assessments have allowed recommendation for upgrade alternatives that have been essential in improving the operation and functionality of many water and wastewater systems across Ontario.

Part of our everyday involvement and usually a fundamental aspect of our day-to-day operation also includes the needs assessment of water and wastewater systems which includes our detailed oriented approach to identify system shortfalls and making provisions to provide alternatives to improve system efficiency. Our team has completed needs assessments of water and wastewater systems for several First Nation and Municipal communities in the past 30 years and have recommended and implemented specific engineering upgrades that have generated sound and positive results.

Our team is also very adept in the process of completing project related financial analysis and cost estimation by using in-house data inventory, software and techniques that have proven to be a very effective and reliable asset that our staff has developed over the years as a strong component of their project management skillset.

## **2. Past Performance and Project Team**

All project team details, including the Key Personnel Form, Organization Chart, Curricula vitae and identified sub-consultants is provided in **Appendix A**. SBA's past performance is outlined in our Corporate Project Sheet included in **Appendix B**.



### 3. Work Plan

The 2022 Water and Wastewater Master Plan will be developed to determine capital growth projects for the next ten (10) years based on growth forecasts and current water and wastewater infrastructure demands. The recommended infrastructure upgrades will be grouped into annual projects over the next ten (10) years to 2032.

SBA understands that this project will unfold in four (4) stages, defined as:

1. Assessment of existing infrastructure and needs review
2. Baseline model development, calibration and validation
3. Development and evaluation of growth scenarios
4. Identify the preferred Water and Wastewater Servicing design alternatives and solutions

Below, our detailed Work Plan is presented, outlining how SBA can meet and exceed the objectives and outcomes of this project.

#### 3.1 Project Initiation

Upon award, SBA will set up a file transfer site, which will become the electronic drive to store and distribute files throughout the project. Additionally, we will enter into an agreement with the Municipality of Wawa for Professional Consulting Services if awarded the project.

Prior to the kick-off meeting, SBA will provide the Municipality of Wawa with a Work Plan that includes a schedule outlining the tasks and critical project paths. Within this submission, SBA will also prepare a list of required background information for collection and review. At this time a sample invoice and template of our project progress/ status report will be submitted for approval.

SBA will also submit a Communications Plan that includes, but is not limited to, the following:

- Master Plan objectives and goals
- Master Plan stages, including Phase 1 and 2 of the Class Environmental Assessment (EA) process
- Project communications schedule
- Stakeholder Communication List
- Public Notices
- Public Information Centres
- Stakeholder meetings
- How stakeholder feedback will be received
- Issues log
- Response preparation

SBA will coordinate with the Municipality to schedule a virtual project kick-off meeting at project onset. At this kick-off meeting, the project team will review the project scope and project schedule as well as review any comments from the submitted Work Plan and Communications Plan. It is SBA's intent that applicable documentation is shared to expedite the background information review phase. Any project changes can be discussed at this time.

The proposed in-person and virtual workshops and progress meetings are outlined in our workplan. Please note that an SBA Engineer, Brandon Smit, currently resides in Wawa and will attend all workshops and progress meetings in-person if acceptable by the Municipality. Although we are proposing that all Public Information Centres are held in-person, we will confirm this approach during the kickoff meeting based on current COVID health protocols.

### **3.2 Stage 1: Assessment of Existing Infrastructure and Needs Review**

SBA will review the relevant available documents and information and will use it to aid the capacity assessment of the existing infrastructure. The information gathered and analysed will be essential for the identification of current issues as well as the development of appropriate solutions.

It has been assumed that all available information such as population, historical flow data, well records, technical reports, drawings, data log records, O&M manuals and asset inventory, etc., will be provided by the Municipality. Any required information or data that is not readily available and that requires the consultant to plan for and prepare will incur an additional fee agreed between the consultant and the Municipality. Stage 1 will include the following tasks.

#### **Task 1: Background Data Review**

Following collection of background information completed at the project kick-off meeting, SBA will review applicable background information from all available sources. This information will provide the framework for the proposed water and wastewater system site visit.

#### **Task 2: Water & Wastewater System Site Review**

Upon completion of the background information review, SBA will schedule a site visit with the Municipality to evaluate the existing condition of the community's water and wastewater infrastructure. This will ensure that information reviewed as part of Task 1 is consistent with site conditions. SBA believes it is critical to review site conditions with Water and Wastewater Operations staff to identify any concerns with operation and maintenance experienced on a day-to-day basis. SBA intends to review site conditions with the resources most familiar with their operation to ensure that any pertinent details can be discussed. This will ensure any criteria not outlined in As-Built drawings, etc. is identified for review. The site visit is scheduled to take place over one (1) day. Review of SCADA programming at the Water Treatment Plant (WTP) and other water and wastewater system controls will be planned to be completed during this site visit.

#### **Task 3: Information Gap Analysis**

Once the background information review and site visit are complete, SBA will identify any further information or data required to proceed. It is assumed that any additional information requests will be received within one (1) week from the date of request. It is also assumed that site work to obtain information about any data gaps will be completed by the Municipality or the Consultant at an additional fee as previously mentioned.

#### **Task 4: Criteria and Needs Memorandum**

SBA will prepare and submit to the Municipality a Draft Criteria and Needs Memorandum which will include the design criteria/basis for water/wastewater system evaluation in addition to other considerations noted during the background information review. Any additional information required to fully assess the community's water and wastewater systems will be identified in the Draft Criteria and Needs Memorandum.

A Planning and Design Review Workshop (Workshop #1) will be held to review specific design criteria and review the draft memorandum submission. Once Municipality feedback is incorporated, the Final Criteria and Needs Memorandum will be submitted to the Municipality. Meeting minutes will be prepared to record discussion, feedback and action items established at this workshop. SBA proposes a progress meeting is scheduled to occur at this time.

#### Task 5: Water/Wastewater System Analysis

In addition to water and wastewater flow records collected within Task 1 & 2, the current and projected populations will be used to determine the projected flows and water consumption for the community up to the 2032 project horizon. It will also be used to estimate the wastewater flow generation, determining the current and required future capacities of the collection system. The water and wastewater systems will be evaluated based on their ability to meet the current demand as well as the 10-year and full build-out maximum day flow rates.

#### **Water Demand**

Historical water flows will be collected from the Municipality water demand records as part of Task 1 and analysed to determine typical water usage patterns. Where the historical demand records are unavailable or deemed insufficient, the typical water demand basis published by the Ontario Ministry of Environment, Conservation and Parks (MECP) will be utilized as a benchmark for this exercise. If historical data is deemed acceptable, the projected water demands will be determined using the community's water usage patterns and proposed population growths.

#### **Water Treatment Plant**

SBA will review the existing treatment and pumping capacities at the WTP and recommend any upgrades to the system if required. As the review of current and future flow demands will be established, this assessment will also identify whether the existing equipment is capable of meeting minimum, average, maximum day demands, as well as peak hour and fire flows. Storage capacity will also be assessed at this time.

Following the site review, opportunities for operational efficiencies will also be identified. This optimization approach is intended to eliminate bottlenecks, ensure reliability and redundancy, reduce operation and maintenance costs and extend the lifetime of equipment at the plant. During the site visit, SCADA information will also be reviewed to ensure all processes are operating as designed, and recommendations for adjustments to operating procedures may be identified, as required.

#### **Water Distribution & Storage**

The evaluation of the water distribution system will be reviewed in accordance with the MECP Design Guidelines for Drinking Water Systems (2019). It is understood that various sections of the distribution system include dead ends. Considerations such as looping may be recommended to prevent stagnation, disinfection by-product formation and deteriorated water quality. Further, the existing water storage tower in the Mission has reduced capacity for a significant portion of the year due to the volume of ice that generates in the elevated reservoir. Considerations for adjustments to seasonal demand patterns or recirculation alternatives may benefit the Municipality's operational practices.

#### **Fire Flow**

SBA will perform a detailed analysis of the fire flow requirements for the water systems. The new criteria if required will be based on one (1) of the following; the MECP's equivalent population estimate, the Fire Underwriter's Survey (FUS) calculation and/ or the National Fire Protection

Associations (NFPA) Rural and Suburban Fire Fighting calculation. The most appropriate method for calculating fire flows for the community will be selected, and the future fire flows will be determined.

### **Chlorine Contact Time (CT)**

SBA will also review the baffling factors and flow volumes for chlorine Contact Time (CT) calculations to confirm adequate chlorine contact is provided before the first user and will provide a recommendation for any upgrades necessary to ensure system compliance for the future population growth.

### **Wastewater Flow**

Historical wastewater flows will be collected from Municipal records as part of Task 1 and analysed in conjunction with population data, and sewage pumping trends, if available. It is understood that wastewater flow demands are limited to what is received by the lagoon, and cannot be separated based on areas within the Municipality. For any gaps in information for this detailed assessment, MECP guidelines will be referenced. This information will lead to the development of projected future sewage flows for the community, including consideration for inflow and infiltration. The wastewater system will be evaluated based on its ability to meet the current demand as well as the projected average daily and peak flow rate for the 10-year and full build-out planning horizon.

### **Wastewater Collection**

Similar to water systems, the historical average day flows and peak day flows will be summarized and evaluated to determine a suitable current design flow which will form the basis for evaluating the system against its current use.

The system capacity study will consider the following for the sewage collection system:

- The size and type of pipe used in the systems;
- The depth and burial of the sewer mains;
- The gradient of the sewer mains;
- Treatment, discharge and pumping capacities.

As part of this task, the inflow and infiltration of the groundwater and stormwater will also be analyzed. For both the inflow and infiltration, SBA will identify various sources that may contribute to clear water being introduced into any sewer systems, providing appropriate recommendations to reduce this risk.

The site visit will allow for the pumping station to be assessed, as well as the community lagoons. Additional considerations will be provided for the existing low-pressure systems which feed the community's forcemain. Options for system redundancy, alternative flow patterns or other operational updates will be identified at this time.

### **Task 6: Hydraulic Model Procedure Development (Water and Wastewater)**

With the water and wastewater demand details and infrastructure assessment completed in Task 5, SBA will have a detailed understanding of the Municipality's water distribution and wastewater conveyance infrastructure. SBA will review the data available and prepare a Draft Model Procedure Memorandum that will clearly detail the implementation approach for the proposed hydraulic models as well as the proposed methodology to ensure Municipal staff can access and manipulate models in the future. This memorandum will be submitted to the Municipality and a

workshop (Workshop #2) will be held virtually to review the draft memorandum. The Final Model Procedure Memorandum will be updated based on the discussions in the workshop and submitted to the Municipality.

#### Task 7: PIC #1 and Notice of Commencement

SBA will work with the Municipality to develop a Stakeholder Distribution List, which will be updated as required throughout the Project.

To increase efficiency, SBA will develop a combined Notice of Commencement and a Notice of PIC #1. After incorporating any feedback regarding the Notice received from the Municipality, SBA will provide a final version for the Municipality to provide to the local newspaper. We have assumed that the Municipality will cover the costs incurred by the newspaper publication. SBA will distribute the final Notice by email to all recipients on the Stakeholder Distribution List. SBA will mail letters to any recipients without an email address.

A Draft submission of the PIC #1 methodology and presentation will be prepared two (2) weeks in advance of the scheduled information centre. Feedback from the Municipality will be reviewed and incorporated prior to the event.

PIC #1 will be held in person to present progress to date to the public. This will include summaries of the planning and design standards phase and the Hydraulic and Modelling Lead will present the model development methodology. SBA will present the approved PIC presentation and host PIC #1 meeting, providing sign-in sheets and comment forms. SBA proposes this is held in-person to meet community members and review and discuss project considerations to date. We feel that this collaboration with community members is an essential facet of community engagement, which allows perspectives from the community to be incorporated directly into the project. Understanding the overall scope of the study, opportunities for community feedback as it relates to land use planning can be included to support future stages of the project. PIC #1 will be followed by a Draft Summary Report submission to the Municipality. A review workshop (Workshop #3) will then be held to review PIC #1 and the Draft Summary Report. The Summary Report will be finalized after addressing comments from the Municipality.

### **3.3 Stage 2: Baseline Model Development, Calibration and Validation**

SBA will perform a computer hydraulic modeling exercise to identify bottlenecks and processing issues within the water / wastewater systems. More so, the use of the computer model exercise will be used as a supplementary tool to corroborate and verify the results of the detailed calculations completed as part of the system capacity evaluation.

Throughout the modelling process, SBA will complete detailed calculations as spot-check validations to verify the accuracy of all models developed. This modelling exercise will review system flows, pressures at junctions as well as identifying any vulnerable low or high points or dead ends within the distribution system which may result in trapped air or chlorine stagnation in the system. The hydraulic model will also help to pinpoint locations where the propagation of contaminant, chlorine concentration and water age are an issue.

The models for the water and wastewater systems will be performed independently under different simulations of spatially and temporally varying water demand and wastewater flow scenarios to produce a range of outputs.

SBA will develop and present the 10-year projected design results in one (1)-year increments and the full build-out for both water and wastewater systems to allow the Municipality to be better informed to make decisions based on short term population growth and community priorities. All identification points will be designated to align with the community's existing ID system.

During the hydraulic modeling for each water system, SBA will simulate the existing and proposed flow conditions through the network to confirm that adequate flow and pressure are available at the furthest protection device in each system and to verify pipe sizes and storage volumes. This will be assessed under all flow demand scenarios from minimum flow to fire demand plus maximum day demand, in line with provincial standards. If modeled water flow or pressure results are outside of the recommended ranges stipulated by the MECP, SBA will provide recommendations to mitigate or solve them.

Similarly, the computer model assessment of the wastewater sewer system will be used to confirm the performance of the sewer lines and pumping systems under existing and future growth conditions, including consideration of:

- Optimization of the use of existing infrastructure such as trunk sewer system and other interconnecting sewers.
- Replacement and upgrades of the local network which comprises old sewer lines with limited capacity; and,
- Optimization of the use of the existing sewage pumping stations and identifying opportunities to replace it with smaller centralized stations that would promote sustainability and minimize operational costs.

SBA is experienced with PCSWMM modelling software which is an advanced tool for modelling water distribution and wastewater collection systems commonly used within the water and wastewater industry. SBA will coordinate with the Municipality in advance of modelling exercises to confirm if the community has a modelling software preference. Other non-licensed alternatives, such as EPANet and HECRAS or Excel-based models, could allow the Municipality to access and manipulate files developed as part of this project without purchasing software licenses. A copy of all models will be submitted to the Municipality for future use. As discussed, SBA will prepare a detailed methodology to ensure that Municipal staff can access and update models in the future. This will also serve as a training reference for future use.

At this time, it is assumed that relevant data for model development will be fully detailed in Stage 1. Therefore, data collection for model development under Stage 2 will not be necessary and it is recommended that Workshops #4 and #5 are amalgamated to expedite the project schedule. SBA proposes that Baseline Model Submission is commenced at the start of Stage 2 to allow for efficiencies in the work plan. Stage 2 will include the following tasks:

#### Task 1: Baseline Hydraulic Model Development

Initially a baseline model will be prepared that reflects existing infrastructure and flow demands using the available data. All models will be generated to align with information from the Municipality's GIS dataset to ensure that the information presented is easily interpreted. This will also facilitate future updates. The model will then be verified to ensure that it accurately simulates the existing systems. Prior to final submission to the Municipality, a baseline model workshop (Workshop #4/#5) will be conducted in-person to review modelling approaches of the existing system and validate that the proposed modelling aligns with existing operation of the water and wastewater systems. Models will be submitted for review two (2) weeks in advance of the

workshop. This workshop will provide an opportunity to review the baseline model and discuss and updates or revisions in advance of reporting. SBA will develop and present water and wastewater model simulations for existing infrastructure which will serve as the foundation for modelling of future growth scenarios considered in the following stages.

#### Task 2: Summary Report Submission

A Draft Summary Report will be submitted for Stage 2 which reviews the basis for water and wastewater hydraulic modelling. This stage will serve as the framework for upcoming growth/development scenarios. The report will further review the considerations required to establish the baseline model and any limitations therein. The outcome of the capacity assessment and modelling exercise will be the identification of potential upgrades to the water / wastewater system infrastructure immediately required, in addition to any current operational bottlenecks. Finally, the detailed methodology will be included to ensure ongoing access and update can be made by Municipal staff for future iterations of modelling the water and wastewater systems. The report will be reviewed and discussed in a Stage 2 review meeting. Any comments and feedback from the municipality will be incorporated following which the final submission of the report will be made.

### 3.4 Stage 3: Development and Evaluation of Growth Scenarios

SBA will assist the Municipality to review or develop land use maps that will indicate the target areas for future developments to support proposed commercial and residential development forecasted to 2032. SBA fully appreciates and understands the merit in matching up water supply and wastewater management systems with zoning and land use mapping to guide and support growth within a community in a sustainable, cost-effective and reliable way. Proposed locations for residential and commercial growth will be reviewed to meet the future needs of the community while ensuring environmental, technical, social and economic constraints are identified.

Stage 3 will include the following tasks:

#### Task 1: Growth/Development Scenarios & Evaluation Matrix

SBA will develop an assessment matrix that will be used to evaluate options for servicing each growth/development scenario. The matrix will consist of several criteria/questions, broken down into categories. Criteria will be weighted and cumulatively used to qualitatively select a preferred option for each category (e.g., natural environment), as well as an overall preferred option. The evaluation matrix will consider a range of criteria that, at a minimum, will include the criteria provided in Section 4.3.3.3 of the RFP, which are broken down into the following categories:

- Natural environment,
- Social environment,
- Technical and
- Economic

The evaluation matrix will be used to communicate to the public in a completely transparent manner, how the different growth/ development scenarios were evaluated to develop a preferred alternative solution. The evaluation matrix may include pre-screening questions to help rule out alternatives that are not feasible, for example alternatives that are cost prohibitive. This would reduce the number of feasible options that require detailed evaluation. The evaluation matrix will be submitted to the Municipality as a draft in advance of Workshop #6. During the in-person Workshop #6, SBA will work with the Municipality to confirm that all potential growth areas are

identified and to use the evaluation matrix to begin evaluating each of these areas. This discussion will consider current zoning, whether expansion beyond the official plan boundaries is possible or desirable, topography, known environmental areas, among other considerations. Criteria that require additional evaluation outside of the workshop will be identified. SBA will use the workshop to work with the Municipality to determine different servicing options for each growth area. The outcome of the evaluation matrix will be to rank potential growth areas from preferred to least desirable.

Workshop #6 will also be used to further discuss projected population trends for the Municipality over the next 10 years as developed in Stage 1. Following Workshop #6, SBA will complete the tasks required to finalize the evaluation matrix, whereupon it will be submitted to the Municipality as a final version and serve as the foundation to assess all growth/ development scenarios.

Depending on the population growth projections, and the size of the growth/ development areas, more than one (1) area may be required to meet the projected population growth and SBA will work with the Municipality to determine when each growth/ development area would need to be constructed to meet demand. A discussion of projected population growth and associated servicing demand projections up to 2032 will be provided in a draft Growth/ Development Report in addition to the assessment completed within Stage 1.

Proposed growth/ development alternatives will then undergo hydraulic modelling to identify any servicing limitations, needs or augmentations to the community's water/wastewater systems to support proposed alternatives. Scenarios modelled under each growth scenario will include minimum, average, maximum day demand (MDD), peak hour and fire flow+MDD scenarios. Various scenarios for fire protection will be simulated to fully detail system operation under different fire scenarios in the community. This exercise will identify any required infrastructure upgrades, such as increase the size of an existing sewer main to alleviate a bottleneck, additional pumping stations, etc. while ensuring that the system is compliant with current provincial standards and guidelines under all conditions. This modelling will be used to identify infrastructure improvements for both current and future servicing operations. SBA will provide Class D cost estimates for water and wastewater services, water distribution and wastewater collection and pumping, as applicable, for each growth area. Cost breakdowns will be broken down annually, including operation and maintenance considerations, and will identify any risks associated with each servicing strategy. The modelling and costing work will be summarized in a draft Growth/ Development scenarios modelling report.

SBA will also develop and submit a draft Growth/ Development report based on the outcome of Workshop #6 that identifies growth areas to accommodate projected population growth.

Workshop #7 will be held virtually and serve as an opportunity for SBA and the Municipality to discuss the findings of the Growth/Development report and growth/development scenarios modelling and to refine this analysis as required. Following this meeting, SBA will finalize the Growth/Development report and submit it to the Municipality for review.

#### Task 2: PIC #2

SBA will develop a Notice of PIC #2 and, after incorporating any feedback on the Notice received from the Municipality, SBA will provide a final version for the Municipality to provide to the local newspaper. We have assumed that the Municipality will cover the costs incurred by the newspaper publication. SBA will distribute the final Notice by email to all recipients on the Stakeholder Distribution List. SBA will mail letters to any recipients without an email address.



SBA will prepare a draft PIC material and will host the PIC #2 meeting. It is assumed that the PIC meeting will be held in-person. We have assumed that information at this PIC would be presented on interactive foam core boards to facilitate and enhance review and discussion opportunities with community members. If a presentation-style meeting is preferred, this can easily be accommodated. SBA will also provide sign-in sheets and comment forms for the PIC.

PIC #2 will be held to review the areas identified as potential future growth areas with the public and to discuss how servicing options are assessed and evaluated through the evaluation matrix. This PIC will highlight potential infrastructure improvements required to support current and future operational requirements associated with each proposed development alternative.

PIC #2 will be followed by a Draft Summary Report submission to the Municipality for Stage 3. A review workshop (Workshop #8) will then be held virtually to review PIC #2 and the Draft Summary Report. The summary report will then be finalized after addressing comments from the Municipality.

### **3.5 Stage 4: Identify Preferred Water and Wastewater Servicing Design Alternatives and Solutions**

Based on the information developed and evaluated in Stage 3, the preferred servicing alternative will be established and refined in Stage 4. SBA will develop detailed plans outlining the proposed phasing, servicing requirements, scheduling, costs and risks associated with the preferred servicing alternative. Any additional criteria required to realize the preferred alternative, including infrastructure upgrades, options subject to a Schedule C Municipal Class Environmental Assessment, etc. will be clearly established to better develop a clear framework to realize the preferred solution. The culmination of this study will be included in the submission of the Water and Wastewater Master Plan, which will detail all capital projects required to facilitate community growth and will include budgets and implementation schedules.

Stage 4 will include the following tasks:

#### **Task 1: Servicing Strategies Evaluation Procedure**

The Servicing Strategies Evaluation Procedure will outline the criteria used to evaluate alternatives considered in Stage 3. Based on feedback from the Municipality, and collaboration with community members received during PIC #2, a preferred alternative will be identified based on the qualitative evaluation of alternatives. The draft report will be issued to the Municipality for review and comment. Any feedback will be incorporated in the final submission.

#### **Task 2: Servicing Solutions and Design Concepts for Preferred Growth/Development Scenario Report and Model**

Based on the evaluation procedure approved in Task 1, SBA will identify a preferred growth/development scenario and further refine the servicing solution to meet the 10-year projected growth of the community. This will include specific details on any requirements for infrastructure upgrades, capital projects, approvals, risks, and costing to complete the preferred alternative over the 10-year project window. Final water and wastewater servicing models will also be included with this submission which will ensure the proposed alternative is technically feasible to support proposed growth and development in the Municipality. This submission will be issued for review by the Municipality in advance of Workshop #9. Workshop #9 will be held virtually to review the submission. Updates and feedback will be incorporated into the final submission.

### Task 3: PIC #3

SBA will prepare draft PIC material and will host the PIC #3 meeting. PIC #3 will be held to ensure that the public is consulted on the final recommendations that result for the Water and Wastewater Master Planning process with particular focus on considerations surrounding the preferred growth scenario and associated servicing. It is assumed that the PIC meeting will be held in-person. We have assumed that information at this PIC would be presented on interactive foam core boards to facilitate review and discussion with community members, but if a presentation-style meeting is preferred, this can easily be accommodated. SBA will also provide sign-in sheets and comment forms for the PIC.


PIC #3 will be followed by a Draft Summary Report submission to the Municipality for Stage 4. A review workshop (Workshop #10) will then be held in-person to review PIC #3 and the Draft Summary Report. The summary report will then be finalized after addressing comments from the Municipality. At this stage, the servicing solutions report will also be finalized. Ultimately, the water wastewater master plan report will be compiled and finalized and submitted for review to the Municipality which will summarize all stages of the project and fully details an implementation plan for the preferred solution.

SBA will incorporate details of the final PIC and any feedback received into the Water and Wastewater Master Plan prior to submitting a final version to the Municipality. It is understood that the Municipality will request Council's endorsement of the Water and Wastewater Master Plan before issuing the project "Notice of Completion" and publishing the final report. Once council approval is received, SBA will develop and issue a notice of commencement to the Municipality for newspaper publication. It is assumed that all newspaper publications will be at the expense of the Municipality. SBA will also notify all stakeholders on the stakeholder distribution list. The report will be posted on the Municipality website for review and comment by stakeholders. SBA will respond to all comments from review agencies and other stakeholders on behalf of the Municipality during the review period.

### 3.6 Project Exclusions

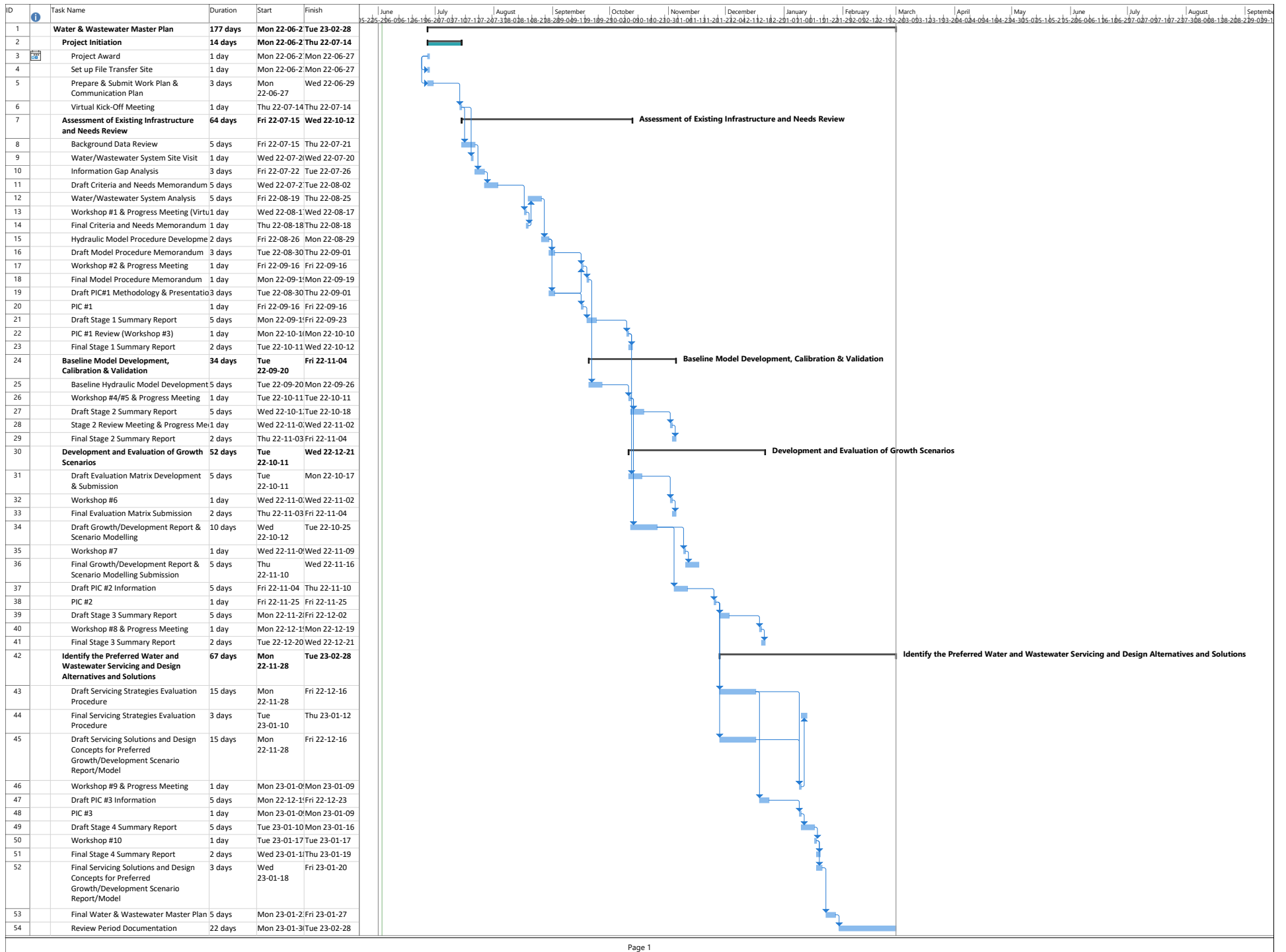
- Agency consultation for confirmation that design criteria and methodology meet the respective policies is excluded from SBA's scope of work. It is assumed that the Municipality will be consulting with the regulatory agencies at this stage.
- It is not anticipated at this time that a wastewater treatment system upgrade will be required. If a major wastewater treatment system upgrade is deemed essential based on calculations, an assimilative capacity study will be required to be completed to determine future regulatory limits for wastewater discharge. This study can be completed if required at an additional fee.

Time-Task Matrix  
(Complex)

 Municipality of Wawa Water and Wastewater Master Plan M22019 Time Task Matrix											
Task Description	Personnel Title	Personnel									Total Person Hours
		Burnett	Dagenais	Callum	Uslu	Creary	Suyarna	Beattie	Smit	Admin	
		Principal	Consult Admin	Senior En- Project Manager	Civil Designer	Civil/Env. all Engineer	Water / W/P Designer	Civil/ Environmental all Eng	Process Engineer		
<b>Task 1: Project Initiation</b>											
1.1	Set up file transfer site									1.0	1.0
1.2	Prepare and provide Work Plan	1.0		2.0		2.0	2.0	4.0	2.0		13.0
1.3	Prepare and submit Communications Plan			4.0		2.0		4.0			10.0
1.4	Virtual Kick-off Meeting	1.0		2.0		1.0	1.0	2.0	1.0		8.0
<b>TOTAL HOURS:</b>		2.0		8.0		5.0	3.0	10.0	3.0	1.0	32.0
<b>Task 2: Stage 1: Assessment of Existing Infrastructure and Needs Review</b>											
2.1	Background Data Review	1.0		2.0	4.0	8.0	8.0	16.0	8.0		47.0
2.2	Water/Wastewater System Site Visit					2.0	4.0	8.0	8.0		20.0
2.3	Information Gap Analysis			2.0		4.0	8.0	8.0	4.0		20.0
2.4	Water/Wastewater System Analysis	2.0				4.0	8.0	8.0	16.0		38.0
2.5	Draft Criteria and Needs Memorandum			2.0	2.0	8.0	8.0	2.0	1.0		15.0
2.6	Workshop #1 & Progress Meeting (Virtual)	1.0		2.0		2.0					5.0
2.7	Final Criteria and Needs Memorandum			1.0				2.0		0.5	3.5
2.8	Hydraulic Model Procedure Development	2.0		8.0	2.0	2.0		4.0			18.0
2.9	Draft Model Procedure Memorandum	1.0		1.0		4.0	2.0	8.0		1.0	17.0
2.10	Workshop #2 & Progress Meeting	1.0		2.0		2.0			2.0		7.0
2.11	Final Model Procedure Memorandum			1.0		1.0		2.0		0.5	4.5
2.12	Draft PIC#1 Methodology & Presentation	1.0		4.0		4.0	2.0	8.0	2.0	1.0	22.0
2.13	PIC #1	8.0		8.0					4.0		20.0
2.14	Draft Stage 1 Summary Report	2.0		2.0		4.0	4.0	16.0	2.0	1.0	31.0
2.15	PIC #1 Review (Workshop #3)	1.0		1.0		2.0			2.0		7.0
2.16	Final Stage 1 Summary Report			1.0		1.0		4.0		0.5	6.5
<b>TOTAL HOURS:</b>		20.0		28.0	4.0	44.0	32.0	82.0	44.0	5.5	229.5
<b>Task 3: Stage 2: Baseline Model Development, Calibration and Validation</b>											
3.1	Baseline Hydraulic Model Development	2.0		2.0	4.0	16.0	8.0	4.0	36.0		72.0
3.2	Workshop #4/5 & Progress Meeting			8.0		8.0			2.0		18.0
3.3	Draft Stage 2 Summary Report	2.0		2.0		4.0	2.0	16.0	2.0	1.0	29.0
3.4	Stage 2 Review Meeting	1.0		1.0		2.0	2.0		2.0		8.0
3.5	Final Stage 2 Summary Report			1.0		1.0		4.0		0.5	6.5
<b>TOTAL HOURS:</b>		5.0		14.0	4.0	31.0	12.0	24.0	42.0	1.5	133.5
<b>Task 4: Stage 3: Development and Evaluation of Growth Scenarios</b>											
4.1	Draft Evaluation Matrix Development & Submission	2.0	2.0	8.0		4.0	4.0	8.0	2.0		30.0
4.2	Workshop #6	8.0		8.0					2.0		18.0
4.3	Final Evaluation Matrix Submission			2.0							2.0
4.4	Draft Growth/Development Report & Scenario Modelling			4.0	16.0	4.0	8.0	16.0	8.0	1.0	57.0
4.5	Workshop #7	1.0		2.0		2.0			2.0		7.0
4.6	Final Growth/Development Report & Scenario Modelling Submission			1.0	2.0			4.0		0.5	7.5
4.7	Draft PIC #2 Information			4.0		4.0	2.0	8.0	2.0	0.5	20.5
4.8	PIC #2	8.0		8.0					4.0		20.0
4.9	Draft Stage 3 Summary Report	1.0		6.0	2.0	4.0	4.0	16.0	2.0	1.0	36.0
4.10	Workshop #8 & Progress Meeting	1.0		2.0		2.0			2.0		7.0
4.11	Final Stage 3 Summary Report			1.0		1.0		4.0		0.5	6.5
<b>TOTAL HOURS:</b>		21.0	2.0	38.0	20.0	29.0	18.0	56.0	24.0	3.5	211.5
<b>Task 5: Stage 4: Identify the Preferred Water and Wastewater Servicing Design Alternatives and Solutions</b>											
5.1	Draft Servicing Strategies Evaluation Procedure	2.0	4.0	4.0	8.0	8.0	8.0	24.0	16.0	1.0	75.0
5.2	Final Servicing Strategies Evaluation Procedure			1.0		1.0		4.0		0.5	6.5
5.3	Draft Servicing Solutions and Design Concepts for Preferred Growth/Development Scenario Report/Model	2.0	4.0	4.0	8.0	8.0	16.0	24.0	16.0		82.0
5.4	Workshop #9 & Progress Meeting	1.0		2.0		2.0			2.0		7.0
5.5	Draft PIC #3 Information			4.0		4.0	2.0	8.0	2.0		20.0
5.6	PIC #3			8.0		8.0			4.0		20.0
5.7	Draft Stage 4 Summary Report	1.0		6.0		4.0	4.0	16.0	2.0	1.0	34.0
5.8	Workshop #10	8.0		8.0					2.0		18.0
5.9	Final Stage 4 Summary Report			1.0		1.0		4.0		0.5	6.5
5.10	Final Servicing Solutions and Design Concepts for Preferred Growth/Development Scenario Report/Model	1.0		1.0		1.0		4.0		1.0	8.0
5.11	Final Water & Wastewater Master Plan	2.0		2.0		4.0	8.0	16.0	8.0	2.0	42.0
5.12	Review Period Documentation	1.0		2.0		2.0	2.0	16.0		1.0	24.0
<b>TOTAL HOURS:</b>		18.0	8.0	35.0	16.0	51.0	40.0	116.0	52.0	7.0	343.0
<b>Total Staff/Total Item (hours/trips/days)</b>		66.0	10.0	123.0	44.0	160.0	105.0	288.0	175.0	18.5	989.5
<b>Percentage of Effort</b>		7%	1%	12%	4%	16%	11%	29%	18%	2%	100%
<b>Provisional Items</b>											
1.0	In-person Kick-off Meeting	16.0		16.0							32
2.0	In-person Workshops			16.0		16.0					32
<b>Total Provisional (hours)</b>		16.0		32.0		16.0					64.0

#### **4. Schedule**

SBA understands that the project will initiate in June 2022 and be finalized by February 28, 2023. SBA will develop an approved control schedule that is continuously monitored and updated. The schedule will identify all major tasks and milestones for all phases of the project. This will ensure that staff have an effective tool for monitoring project progress. Below, we are presented our schedule for this project.



## 5. Project Management

Our project management team will keep the Municipality of Wawa up to date on the project status by providing the following items:

- Finalized work breakdown structure
- Updated resource-based schedule in Gantt chart format
- Project risk assessment and management memo include risk assessment breakdown in tabular format
- Monthly status reports summarizing the tasks completed, tasks to be completed, project schedule and project budget including cash flow projections, risk management activities and other relevant information
- Monthly status meetings, and public and stakeholder meetings as required
- An electronic drive for all project documents for review and exchange amongst the project team.

SBA utilizes a powerful project management software called Unanet that allows the entire project lifecycle to be tracked. The software allows a report to be downloaded that outlines each staff member's current projects, upcoming tasks and any potential conflicts. The project team members referenced in this proposal will be available for the entirety of the project, with contingency plans in place to account for any unexpected absences or additional need for resources due to unforeseen circumstances (i.e., weather delays etc.) as needed to deliver this project on time and on budget.

SBA also has progress/ status reports templates which will be utilized for this project as well as shared with the Municipality upon award along with an invoice sample.

The budget will be tracked by the project lead throughout the project lifecycle. The established budget is based upon project tasks. Each team member's time will be tracked on a weekly basis and corrective action will be taken immediately to remediate any potential project over-runs.

### 5.1 Quality Assurance and Accountability

SBA is committed to quality service and client satisfaction. To ensure this high level of service is maintained, SBA has implemented an internal quality control mechanism for all projects. SBA has developed detailed procedures and checklists that ensure that each phase of the project meet established quality standards:

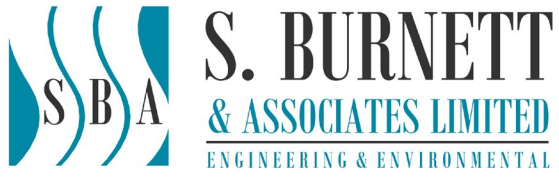
- Senior-level engineers that have decades of experience in the planning, design, construction and operation requirements of water systems are leading the project and will review work completed at each project phase;
- As mandated in the Ontario regulation for Drinking Water Systems, the design engineers understand the requirements of all applicable federal and provincial regulations, guidelines and policies;
- The project team will use standardized SBA process assets including policies, templates such as checklists and reporting procedures; and

- Quality control audits will occur throughout the project lifecycle to compare the deliverables to the project scope, schedule and cost baselines established in the work plan.

## 5.2 Meetings

SBA will arrange all project meetings, distribute meeting agendas, prepare minutes and presentations. Material for meetings will be distributed to the project team two (2) weeks ahead of the schedule meeting or workshop. SBA proposes that, where convenient, progress meetings are paired with workshops. A provisional price has been included within the TTM to account for any additional progress meetings that may be required. The following meetings have been accounted for in our Work Plan:

- Kick-off Meeting
- Workshop No. 1 to 10
- PIC No. 1 to 3



## Appendix A

### Project Team Information



### Key Personnel Form

Staff roles and experience is provided in detail following this table. For detailed project descriptions please refer to **Appendix B**. We have provided only the project title under project description within this table. For further details on roles and responsibilities each person held for the projects listed in this table, please refer to the Curriculum vitae.

Name	Project Role	% of Total Hours*	Years of Experience	Relevant Project Experience		
				Project Description	Roles and Responsibilities	Reference Information
Stephen Burnett, P.Eng.	Project Manager and Client Liaison	7%	25+	Schedule B Class EA, Wastewater Master Servicing Plan EA, Linear Works Master Servicing Plan (all Town of Shelburne)	Project Manager, QA/QC, Client Liaison	Jim Moss, Director, Development and Operations (519) 925-2600 ext. 227 jmoss@shelburne.ca OR Denyse Morrissey, Chief Administrative Officer (519) 925-2600 ext. 226 dmorrissey@shelburne.ca
				Wastewater Treatment Assessment and Water Supply, Treatment, Distribution/ Storage Feasibility Study for Mississaugas of Scugog Island First Nation	Project Manager, QA/QC, Client Liaison	Chief Kelly LaRocca (905) 989-3337 klarocca@scugogfirstnation.com OR Colleen Kennedy, Band Manager (905) 985-3337 ext. 265 ckennedy@scugogfirstnation.com

				Wastewater Treatment, Class C EA for the Township of Emo	Project Manager, QA/QC, Client Liaison	Crystal Gray, Interim CAO/ Treasurer (807) 482-2378 Deputy.treasurer@emo.ca OR Jason Smith jsmith@emo.ca
Ian Callum, PMP, M.Sc.	QA/QC Reviewer and Environmental Assessment Expert	12%	20+	Schedule B Class EA, Wastewater Master Servicing Plan EA, Linear Works Master Servicing Plan (all Town of Shelburne)	EA Lead/ Expert, QA/QC Review and Technical Support	Jim Moss, Director, Development and Operations (519) 925-2600 ext. 227 jmoss@shelburne.ca OR Denyse Morrissey, Chief Administrative Officer (519) 925-2600 ext. 226 dmorrissey@shelburne.ca
				Water Supply Municipal Class EA for Norfolk County	EA Lead/ Expert, QA/QC Review and Project Manager	Bill Banks, Principal Hydrologist for Banks Groundwater Engineering Limited (519) 829-4808 bill.banks@banksgroundwater.ca
				Capital Planning Study and Infrastructure Work for Atikameksheng Anishnawbek	EA Lead/ Expert, Project Manager	Gary Naponse, Director of Housing and Infrastructure (705) 692-3651 Director.housing-infra@wfn.com
Daymar Creary, P.E., B.Sc.	Hydraulics and Modelling Lead	16%	12	Water and Wastewater Capacity Studies for the Township of Springwater	Technical Lead, Hydraulics and Modelling	Curtis Parker, Senior Operations Manager (519) 939-1111 cparker@ocwa.com

				Water System Feasibility Study and Preliminary Design, Grassy Narrows First Nation	Technical Lead	Robert Williamson, Project Manager (807) 407-7051 or (807) 925-2201 robertcwilliamson2@gmail.com
				Capital Planning Study and Infrastructure Work for Atikameksheng Anishnawbek	Technical Support	Gary Naponse, Director of Housing and Infrastructure (705) 692-3651 Director.housing-infra@wfn.com
David Dagenais, A.Sc.T.	Cost Estimator	1%	30+	Schedule B Class EA, Wastewater Master Servicing Plan EA, Linear Works Master Servicing Plan (all Town of Shelburne)	Cost Estimator	Jim Moss, Director, Development and Operations (519) 925-2600 ext. 227 jmoss@shelburne.ca OR Denyse Morrissey, Chief Administrative Officer (519) 925-2600 ext. 226 dmorrissey@shelburne.ca
				Water and Wastewater Capacity Studies for the Township of Springwater	Cost Estimator	Curtis Parker, Senior Operations Manager (519) 939-1111 cparker@ocwa.com
				Wastewater Treatment, Class C EA for the Township of Emo	Cost Estimator	Crystal Gray, Interim CAO/ Treasurer (807) 482-2378 Deputy.treasurer@emo.ca OR Jason Smith

						jsmith@emo.ca
Bulent Uslu, P.Eng.	Engineering Support (CAD Lead)	4%	20+	Schedule B Class EA and Linear Works Master Servicing Plan (all Town of Shelburne)	Engineering and CAD Support	Jim Moss, Director, Development and Operations (519) 925-2600 ext. 227 jmoss@shelburne.ca OR Denyse Morrissey, Chief Administrative Officer (519) 925-2600 ext. 226 dmorrissey@shelburne.ca
				Wastewater Treatment Assessment and Water Supply, Treatment, Distribution/Storage Feasibility Study for Mississaugas of Scugog Island First Nation	Engineering and CAD Support	Chief Kelly LaRocca (905) 989-3337 klarocca@scugogfirstnation.com OR Colleen Kennedy, Band Manager (905) 985-3337 ext. 265 ckennedy@scugogfirstnation.com
Nibhana Suvarna, M.Sc., B.Eng.	Engineering Support (including QA/QC support)	11%	6	Schedule B Class EA, Wastewater Master Servicing Plan EA, Linear Works Master Servicing Plan (all Town of Shelburne)	Technical Lead (i.e., Engineering Support) and Hydraulics and Modelling Support	Jim Moss, Director, Development and Operations (519) 925-2600 ext. 227 jmoss@shelburne.ca OR Denyse Morrissey, Chief Administrative Officer (519) 925-2600 ext. 226 dmorrissey@shelburne.ca
				Water and Wastewater	Engineering Support	Curtis Parker, Senior Operations Manager

				Capacity Studies for the Township of Springwater		(519) 939-1111 cparker@ocwa.com
				Sewage Pumping Station Assessment For the Township of Emo	Engineering Support	Crystal Gray, Interim CAO/ Treasurer (807) 482-2378 Deputy.treasurer@emo.ca OR Jason Smith jsmith@emo.ca
Diana Beattie, B.Eng., EIT	Engineering Support	29%	5	Schedule B Class EA, Wastewater Master Servicing Plan EA, and Linear Works Master Servicing Plan (all Town of Shelburne)	Engineering Support and Modelling	Jim Moss, Director, Development and Operations (519) 925-2600 ext. 227 jmoss@shelburne.ca OR Denyse Morrissey, Chief Administrative Officer (519) 925-2600 ext. 226 dmorrissey@shelburne.ca
				Water and Wastewater Capacity Studies for the Township of Springwater	Engineering Support and Hydraulic and Process Assessment	Curtis Parker, Senior Operations Manager (519) 939-1111 cparker@ocwa.com
Brandon Smit, P.Eng.	Technical Support	18%	4	Wastewater Treatment, Class C EA for the Township of Emo	Technical Support	Crystal Gray, Interim CAO/ Treasurer (807) 482-2378 Deputy.treasurer@emo.ca OR Jason Smith jsmith@emo.ca
				Kenora OPP Detachment	Technical Support	Jeff St. Pierre, Regional Manager – Northwestern Ontario Hub

				Septic System Compliance Assessment		(705) 943-5578 JSt.Pierre@ocwa.com
				Capital Planning Study and Infrastructure Work for Atikameksheng Anishnawbek	Technical Support	Gary Naponse, Director of Housing and Infrastructure (705) 692-3651 Director.housing-infra@wfn.com
*remaining 2% assigned to administrative staff						

A summary description of each staff member's qualifications and experience is provided herein. Our senior staff offer more than 30-years of expertise in water and wastewater system feasibility, treatment design and evaluation engineering, including public consultation, approvals and permitting, tendering and contract administration for First Nation projects.

**Project Manager and Client Liaison**

Stephen Burnett, P.Eng.  
**Principal**

**Years of Experience:**  
25+

Stephen has extensive experience in project management, water supply, treatment and wastewater infrastructure design, system assessments and feasibility, capital planning, infrastructure evaluation and construction, environmental assessment and contract administration. Over the past 26-years, he has provided engineering services and expert advice to First Nation and Municipal clients in the areas of WTP design, water and wastewater system feasibility studies, community development planning, environmental assessments, infrastructure servicing and assessment, and capital planning for future growth.

Stephen has fulfilled the role as project manager and lead engineer on relevant planning projects over the past 13-years as the Principal of SBA. Prior to founding SBA, Stephen acted as a project manager and lead design engineer for numerous related infrastructure projects and cumulatively has 26-years of experience in this role.

Stephen was also the Ontario lead for the water and wastewater National Assessment completed by Indigenous Services Canada (ISC) to assess all First Nation systems across Canada. His Master Servicing Plan experience is extensive, having led 20 Municipal Class EAs and Federal EAs.

Stephen is very familiar with engineering and environmental regulations at the Municipal, Provincial and Federal levels. His diverse experience enables him to provide comprehensive services relating to both infrastructure assessment and MEA and CEEA planning initiatives as well as detailed design support for civil, environmental and structural infrastructure projects. Stephen is very experienced in examining services based on capital cost, operation and maintenance, life cycle analysis, environmental concerns, future expandability and public input so that communities can plan for the long-term.

Stephen has excellent interpersonal skills in public consultation and presentations. He has the unique ability to explain relatively complex technical matters for understanding by the general public. Stephen has also project managed several multi-discipline teams in complex design and assessment projects for various Municipal and First Nation clients.

**Stephen will be the Project Manager for this project, with support from Ian. Stephen and Ian have completed numerous successful projects in these respective roles. In addition to**

**project management, Stephen will also provide senior engineering oversight to the team and liaise with the Municipality.**

**QA/QC Reviewer, PM Support and EA Expert**

Ian Callum, PMP., M.Sc.  
**Senior Environmental Project Manager**

**Years of Experience: 20**

**Ian** is a certified Project Management Professional with more than 20-years of experience in environmental planning projects that include planning, feasibility, permitting, and environmental assessment projects. Ian has overseen technical leads, built strong client relationships, supervised and guided report writing, developed and implemented community engagement plans, and overseen project interactions with regulators.

Ian has led a wide range of environmental assessments, including Municipal Class Environmental Assessments (EAs) for the Town of Shelburne that include EAs to increase wastewater treatment capacity, to increase water supply, and a Water/Wastewater Master Servicing Plan EA. Ian has also led the EA for a water supply project for the County of Norfolk.

Ian has also led other community infrastructure projects, including the Capital Planning Study for Atikameksheng Anishnawbek First Nation, as well overseeing a design project that includes the replacement of a section of watermain and designing the replacement of up to 35 septic systems.

**For this project, Ian will lead the EA, which will include planning and delivering project consultation, developing the alternative solution evaluation matrix, and overseeing all aspects of EA reporting. Ian will provide QA/QC review for all report content prior to submission to the Municipality of Wawa project team. Ian will also provide project management support to the Project Manager by developing a project status reporting template and overseeing deliverables, project schedule, project budget, and project risks.**

**Hydraulics and Modelling Lead**

Daymar Creary, P.E., B.Sc.  
**Senior Professional Engineer**

**Years of Experience: 12**

**Daymar** has over 10-years of applied design and project management experience. Daymar is experienced in water and wastewater systems, structural assessment of commercial and residential developments, stormwater management designs, geotechnical works, highway engineering, structural analysis and subdivision planning, design and implementation and highway design and construction supervision. He has worked on water infrastructure projects (i.e., upgrades, feasibility studies, capacity assessments, design) for over eight (8) First Nation communities across Ontario.

Daymar has been the technical lead for a number of water and wastewater infrastructure Feasibility Studies for First Nation client across Ontario. Daymar is SBA's lead for hydraulic modelling for



each of our water and wastewater projects with First Nation and Municipal clients.

**For this project, Daymar will be the Hydraulics and Modelling Lead, bringing forward his experience on other projects with a similar servicing and capacity size as Wawa. Daymar will also providing engineering support to the team throughout this project.**

#### Cost Estimator

David Dagenais, A.Sc.T.  
Senior Constructability  
and Operability  
Reviewer

Years of Experience:  
30+

**David** is a Senior Design and Construction Technologist within the areas of water and wastewater treatment and municipal infrastructure design and construction. His 30+ years of experience spans many projects within First Nation and Municipal environments throughout Ontario and the western provinces. His experience includes various projects involving assessments, approvals, specification document preparation and contract administration for buildings, water and wastewater infrastructure, commissioning, start-up and performance testing operations management. David utilizes his extensive construction and contract administration experience to provide accurate cost estimates. He has applied his expertise in several areas including projects involving water supply, treatment, storage and distribution, wastewater collection and treatment, pumping stations including the assessment of existing infrastructure assets.

**David will be the Cost Estimator for this project, utilizing his extensive knowledge of Municipal infrastructure. He will also be available to the team to assess alternatives and recommendations.**

<p><b>Engineering Support (including QA/QC support)</b></p> <p>Nibhana Suvarna, M.Sc., B.Eng.</p> <p><b>Water and Wastewater Designer</b></p> <p><b>Years of Experience: 6</b></p>	<p><b>Nibhana</b> is an Environmental Engineer with over six (6)-years of experience in water and wastewater system design. She is proficient in the process development and design of water and wastewater treatment plants. Her experience also includes preparing equipment sizing calculations, specifications and supporting construction activities. She has worked on the preliminary and detailed design of various water and wastewater facility design and conveyance projects for public and private sector clients. Her experience includes reviewing equipment supplier quotations for compliance with design requirements and standards. She has also worked on the preparation of the basis of design reports/design briefs, tender documents, process flow diagrams, P&amp;IDs, equipment layouts, hydraulic calculations and equipment sizing for these projects.</p> <p><b>For this project, Nibhana will be the primary engineering support as well as providing QA/QC review of Brandon’s work. She will bring forward her extensive experience working with the Town of Shelburne on their water and wastewater infrastructure projects including the Master Servicing Plan.</b></p>
<p><b>Engineer Support</b></p> <p>Bulent Uslu, P.Eng. <b>CAD Designer</b></p> <p><b>Years of Experience: 20+</b></p>	<p><b>Bulent</b> is a Professional Engineer with vast municipal infrastructure, design, and engineering experience at local, provincial, and international levels. This includes water and wastewater treatment plants, roads, highways, bridges, drainage infrastructure, stormwater sanitary sewer distributions, collections, pumping stations, force mains, landfills, solid waste disposal facilities, remediations, transfer station designs, cost estimates, budgeting, construction supervision and, contract administration, including client and contractor relations. In addition to being a CAD Designer, Bulent provides hydraulic and modelling support to our team.</p> <p><b>For this project, Bulent will provide engineering support for the project and will specifically focus on hydraulic and modelling under Daymar’s direction.</b></p>

**Engineering Support**  
Diana Beattie, B.Eng.  
**Engineer-In-Training**

**Years of Experience: 5**

**Diana** is an environmental engineer-in-training (EIT) with significant experience in water, wastewater and stormwater system design, contract administration, and field inspections. She has worked on treatment, storage and distribution projects from design through tendering, construction, and commissioning. Her experience in the field leading start-up and commissioning activities serves as an asset in her design work. In addition to her technical experience, Diana is a talented writer and has prepared numerous report requirements for projects as well as providing QA/QC review for reports generated by other team members.

During her tenure with SBA, Diana has worked on a multitude of water infrastructure projects such as new construction, upgrades and expansions for First Nation communities. She supported these projects by completing hydraulic calculations, sizing pumps, developing alternatives for cost analysis, agency consultation, preparing design briefs, shop drawings review, addressed contract requests and change orders and other contract administration duties as required. Additionally, Diana has worked with treatment technology suppliers through proposal review, detailed design, construction and commissioning. Diana also has expertise related to sanitary servicing.

**Diana's primary role for this project will be to lead the reporting efforts of this project. She will bring forward her SCADA expertise to support Nibhana for that aspect of the project.**

**Technical Support**

Brandon Smit, P.Eng.  
**Process Engineer**

**Years of Experience: 4**

**Brandon** is a process engineer with experience in water and wastewater system design and contract administration. He has worked on supply, treatment, storage, and distribution projects from feasibility and design through tendering, construction, and commissioning. In his feasibility and design work, Brandon has completed detailed background reviews, environmental, technical, and economic assessments, and extensive design calculations for water and wastewater projects. Brandon is familiar with the scope of the project due to his involvement in various water projects throughout the OTC communities such as recent projects in MSIFN and GIFN. Most recently, Brandon finalized the Georgina Island First Nation East/South Water Servicing Feasibility Study.

**Brandon will provide technical support for this project. In addition, Brandon is located in Wawa and therefore will be present for meetings in-person and will be available to collection information as needed.**

In addition to the SBA team, SBA may retain the services of Tatham Engineering Limited for SCADA support and we have carried a limited budget for this scope of work. SBA has an established relationship with Tatham, and our firms have collaborated on numerous water and wastewater projects over the past 13 years. Due to our extensive working relationship, we

consider our joint expertise to be one (1) team on all our projects. All members of SBA's team listed in this proposal have worked with Tatham staff to various extents on previous projects and these relationships will carry through to this project.

Tatham Engineering Limited is a team of multi-disciplinary project managers, engineers, technical staff and industry professionals who have been challenged to provide consulting engineering, design and construction services. Tatham Engineering Limited has offices in Collingwood, Barrie, Bracebridge, Orillia and Ottawa.

**Senior Electrical Engineer**

Gerhard Runge, P.Eng.

**Years of Experience:**  
30+

Gerhard Runge has been providing engineering services in Canada since 1988 as an electrical power, lighting instrumentation and controls engineer. Client sectors include municipal, land development servicing, utility companies, industrial, institutional and renewable energy. Gerhard is responsible for equipment inspections and assessments, preliminary design brief preparation, pre-design planning, cost estimating, detailed engineering design, electrical (hydro) assessments, generator assessments, PLC-SCADA integration, specification and tendering preparation, construction inspections, shop drawing reviews, start-up assistance and commissioning, and project management.

**For this project, Gerhard will provide QA/ QC for SCADA support.**

**Senior Electrical Designer**

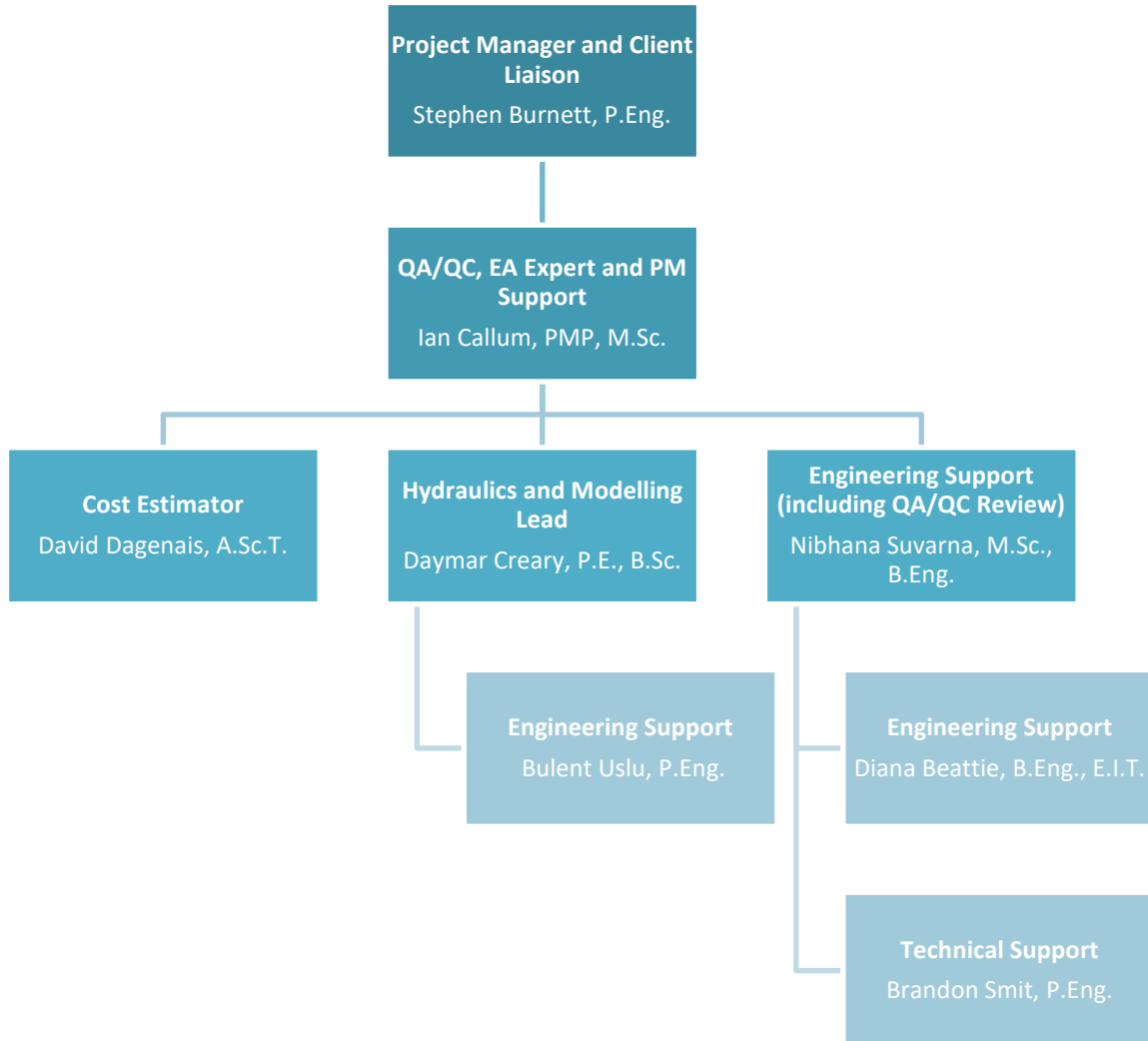
Steven Tymczuk, B.Sc.,  
B.Eng.

**Years of Experience:**  
30+

Steven Tymczuk has been providing engineering design services in Canada since 1986. Steven's expertise in controls engineering, industrial engineering, maintenance supervision and project management has provided him with a solid foundation to handle various municipal, industrial, institutional and commercial projects. This background has enabled him to provide electrical design for controls/ SCADA applications that are both comprehensive from an equipment efficiency and reliability point of view, as well as, fitting in with the customer's specific philosophy. Steven has considerable experience in proposal writing, pre-design planning, detailed engineering design, electrical specification writing, control/ process narrative writing, tender preparation, electrical construction inspection and reports, commissioning and reports, factory acceptance testing and reports, budget tracking and project management.

**For this project, Steven will lead the SCADA support scope.**

An organizational chart showcasing SBA's staff is provided below. SBA's project team identified in this proposal will utilize the internal chain of command as presented in the organization chart. Nibhana and Diana will coordinate with Tatham Engineering Limited for the SCADA scope.



## **SUMMARY**

Stephen has extensive experience in Project Management, Infrastructure Planning, Municipal Engineering, and Engineering Design and Construction. Over the past 26 years, Stephen has provided engineering services to Municipal, First Nation and private clients in the area of Environmental Assessments, water supply and treatment, infrastructure servicing, sanitary sewage treatment and disposal, road and bridge assessment and design and planning and design for commercial and residential housing.

## **MASTER SERVICING PLANS**

Stephen has extensive Master Servicing experience and has completed numerous Class EA studies following both the MEA Class EA Municipal process as well as the Federal EA process. The following are just a few Class Environmental Assessments that Stephen has led:

- Town of Orangeville, Schedule 'A' and Watermain Replacement EA
- Town of Orangeville, Water & Wastewater Master Servicing Plan, Schedule 'B' EA
- Town of Orangeville, WPCP Effluent Disinfection Schedule 'B' EA
- Town of Orangeville, WPCP Headwaters EA Addendum
- Town of Shelburne, Water & Wastewater Master Servicing Plan, Schedule 'B' EA
- Town of Shelburne, Water Storage, Schedule 'B' EA
- Town of Shelburne, Water Supply, Schedule 'B' EA
- Town of Shelburne, WPCP Upgrade, Schedule 'C' EA
- Township of Emo, Recycling Facility & Transfer Station, Schedule 'B' EA
- Township of Emo, Sewage Lagoon Expansion, Schedule 'C' EA
- Township of Emo, Water & Wastewater Master Servicing Plan, Schedule 'B' EA
- Township of Emo, Water Treatment Plant (WTP) Upgrade, Schedule 'B' EA
- County of Norfolk, Wildlife Crossing, Schedule 'B' EA
- Alderville First Nation, SMW Solar Facility EA & Renewable Energy Approval
- Ballantrae Golf & Country Club, Wastewater Servicing EA
- ClubLink Golf, Risk Assessment Water & Wastewater
- Mansfield, Water & Wastewater Servicing Master Plan
- Moose Deer Point First Nation, Water Supply & Treatment, Federal EA

Stephen has also led numerous Federal EA's including:

- Detroit River International Crossing, Federal EA Peer Reviewed Lead, Walpole Island First Nation



### **EDUCATION**

**B.Sc. Civil Engineering (Honours)**

University of Waterloo

### **PROFESSIONAL RECORD**

#### **Principal**

S. Burnett & Associates Ltd.  
2009 – Present  
Orangeville, ON

#### **Client Services Manager Eastern Canada and USA**

Neegan Burnside Ltd.  
2009  
Orangeville, ON

#### **Senior Project Manager / Orangeville Branch Manager**

R.J. Burnside & Associates  
Ltd.  
1995 - 2008  
Orangeville, ON

### **PROFESSIONAL MEMBERSHIPS**

Association of Professional  
Engineers of Ontario

Ontario Society of  
Professional Engineers

OWWA Member

- UXO Investigation, Camp Ipperwash, DND
- Tri Municipality (Kenora) Solid Waste EA Peer Review
- Highway 400 Expansion, MTO, Peer Review

## **WATER AND WASTEWATER PROJECTS**

### **Water Treatment Plant Planning and Design**

Stephen has led numerous multi-disciplined project teams for water treatment plant (WTP) feasibility, planning and design. Stephen has extensive municipal servicing and WTP construction experience and has project managed several teams in complex design and assessment projects for First Nation communities and Ontario Municipalities. The following is a list of recent WTP facilities:

- Town of Orangeville, GUDI Well WTP Design Upgrades
- Town of Orangeville, Six WTP Designs for GUDI Treatment
- Town of Orangeville, Watermain Replacement Matthew/McCarthy Streets
- Town of Shelburne, Well 7 Construction, Water Tower Rehabilitation, Well 3 Arsenic Removal, Well 7/8 Class EA
- Township of Emo, WTP Expansion
- Township of Emo, Watermain Looping & Extensions
- Big Grassy First Nation, WTP Upgrades Feasibility, Design, & Contract Administration
- Chippewas of Georgina Island First Nation, Water Treatment Feasibility Study & WTP Design & Contract Administration
- Grassy Narrows First Nation, WTP Feasibility Study & Interim WTP Upgrades
- Lac Seul First Nation, WTP Feasibility, Design & Contract Administration
- Lac Seul First Nation, WTP, Storage & Distribution
- Mississaugas of Scugog First Nation, WTP, Tower & Watermain Distribution
- Mitaanijigamiing First Nation, WTP Expansion
- Moose Deer Point First Nation, WTP, Tower & Distribution
- Naicatchewenin First Nation, WTP, Storage & Distribution
- Nawash First Nation, WTP Upgrade
- Wabigoon Lake Ojibway Nation, WTP Interim Upgrades

### **Sewage Treatment Planning and Design**

Stephen has led multiple sewage treatment feasibility, planning and design projects and has extensive sewage servicing experience. The following is a list of recent projects:

- Town of Orangeville, Digester Upgrades
- Town of Orangeville, Effluent Disinfection Upgrades
- Town of Orangeville, WPCP Headworks Sewage Pumping Station
- Town of Shelburne, Tertiary Filter Expansion
- Town of Shelburne, Wastewater Treatment Plant Class EA
- Township of Emo, Sewage Lagoon Expansion
- Township of Emo, SPS Retrofit
- Couchiching First Nation, Five Mile Dock Sewage Treatment & Collection
- Lac Seul First Nation, Sewage Lagoon & Collection System
- Mississaugas of Scugog First Nation, Wastewater Treatment Plant, Health & Safety Assessment
- Wauzhushk Onigum First Nation, Sewage Treatment Plant

## SUMMARY

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Ian is a certified project management professional with 20-years of experience planning infrastructure, energy, and renewable energy projects for municipalities, First Nations, and private sector clients. In addition to managing small to multi-million-dollar infrastructure projects, Ian has considerable experience in community engagement, environmental assessment and permitting, and securing funding on behalf of our clients.

## INFRASTRUCTURE PLANNING

### Town of Shelburne Master Servicing Plan EA

Ian is currently the project manager for two separate Master Servicing Plan EAs, the first for water and wastewater, and the second for stormwater. These EA will help the Town to plan its infrastructure needs for the next 20-years. In addition to overseeing EA reporting, Ian led all aspects of project consultation.

### Municipal Class Environmental Assessment (EA) for Increased Capacity of the Water Pollution Control Plant, Town of Shelburne

Project Manager for the Schedule Class Municipal Class EA which assessed option and selected the preferred means for the Town to meet wastewater treatment demand for the next 20-years. The project included the completion of an assimilative capacity study and determining monitoring requirements and stewardship opportunities in consultation with the Nottawasaga Conservation Authority.

### Long-Term Well Project, Town of Shelburne

As Project Manager, Ian led the harmonized provincial and federal (CEAA) environmental assessment to find a new water supply for the Town of Shelburne. The project resulted in locating a new deep well aquifer and the construction of two new production wells. Ian led the environmental assessment process, public, First Nations, and agency consultation and managed project technical studies, including natural heritage, archaeological, and hydrogeological assessments. The project was



## EDUCATION

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### M.Sc. Agriculture and Biosystems Engineering

McGill University, Montreal, Quebec, 2001

### B.Sc. Environmental Science

University of Guelph, Ontario, 1997

## PROFESSIONAL RECORD

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### Senior Environmental Project Manager

S. Burnett & Associates Limited  
2019  
Orangeville, ON

### Callum Consulting

EA Project Manager  
2017 - 2018  
Guelph, ON

### EcoMetrix Inc.

EA Project Manager  
2015 - 2016  
Mississauga, ON

### Golder Associates

Project Manager/EA Specialist  
2008 - 2014  
Mississauga, ON



## **PROFESSIONAL MEMBERSHIPS**

Project Management Professional  
Project Management Institute  
(PMI), July 7, 2013

## **AREAS OF EXPERTISE**

- Project management
- Provincial and Federal environmental assessments
- Waste management
- Energy and infrastructure planning
- Funding Opportunity Identification and Management

successfully constructed and is under operation. Ian is currently managing a new EA to plan the Town's water supply for the next 20-years.

### **Community of Simcoe Additional Water Supply – Class EA, Norfolk County**

Ian is managing the Class EA for the site selection and construction of a new water supply well for the Norfolk County. For this project, Ian adapted consultation plan to successfully alleviate public concerns regarding the project.

### **Atikameksheng Anishnawbek First Nation Capital Planning Study**

As Project Manager, Ian is currently overseeing updating Atikameksheng's 2001 Capital Planning Study. This update will provide costing and a detailed road map for the community's infrastructure needs for the next 20 years. A key aspect of this project that Ian is overseeing is community engagement program, as well as coordinating with Indigenous Services Canada.

### **Atikameksheng Anishnawbek First Nation Design Project**

Ian is currently managing a large design and contract administration project for the Atikameksheng community. The Project consists of designing 3 km of new bypass road, 2 km of road resurfacing, replacing up to 35 septic systems, replacing a watermain, and design upgrades to the community centre. The project has an aggressive timeline and has required strong project management and creative solutions to keep the project on track.

### **Iskatewizaagegan #39 Waste Management Program, Iskatewizaagegan #39 First Nation**

Developed a Solid Waste Management Program for the community. The Program included the development of a plan for the safe closure of an existing landfill and future waste management, including the introduction of recycling services. Ian provided senior leadership and oversight to the project, specifically concerning report writing and soliciting input from Chief and Council, the Bimose Tribal Council, and Indigenous Services Canada (ISC). Ian also led preliminary funding discussions with ISC.

### **Dufferin County Engineering Services for the Rehabilitation/ Replacement of Six Structures.**

As Project Manager, Ian is currently managing the design, environmental permitting, tendering, and contract administration for the replacement or rehabilitation of six culverts and bridges in the County of Dufferin.

## SUMMARY

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Daymar is a civil and environmental engineer with 13-years of applied design and project management experience. He is a reliable and resourceful professional with the demonstrated ability to implement innovative engineering solutions in the civil and environmental engineering industry. With his diverse involvement in consulting engineering, contract administration and site supervision, Daymar is experienced in stormwater management designs, geotechnical works, highway engineering, structural analysis and water and wastewater system designs. He is also knowledgeable of environmental, safety and quality control philosophies in the construction industry, and can apply construction methodologies and building codes consistent with Canadian standards. He has applied his experience in several areas including, hydraulic modelling of water and wastewater systems, structural assessment of commercial and residential developments, subdivision planning, peer reviews, highway design, contract administration and construction supervision.

## WATER AND WASTEWATER PROJECTS

### **Water System Feasibility Study, Grassy Narrows First Nation, Grassy Narrows, ON**

Technical lead responsible for preparing and coordinating the completion of the feasibility study including background and needs report, interim and final reporting, water quality assessment, population projections, identification of the source, water treatment, storage and distribution options for the community and preparation of detailed capital, O&M and life cycle cost estimates.

### **Water System Feasibility Study, Wabigoon Lake Ojibway Nation, Dryden, ON**

Ongoing project management role responsible for coordinating and overseeing the completion of the feasibility study including background and needs report, interim and final reporting, water quality assessment, population projections, identification of the source, water treatment, storage and distribution options for the community and preparation of detailed capital, O&M and life cycle cost estimates.

### **Capital Planning Study, Atikameksheng Anishnawbek First Nation, Naughton, ON**

Ongoing senior technical support to update the community's 2001 CPS and to develop a road map for the community's infrastructure needs for the next 20 years. Daymar has been



## EDUCATION

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**Bachelor of Science  
(Honours) Civil &  
Environmental Engineering**  
University of the West Indies St.  
Augustine, Trinidad

## PROFESSIONAL RECORD

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**Civil & Environmental  
Engineer**  
S. Burnett & Associates Limited  
2017-Present  
Orangeville, ON

**Construction Supervisor**  
Torino Drywall  
2016-2017  
Vaughan, ON

**Project Engineer /Manager**  
Rural Water Supply Ltd.  
(formerly Carib Engineering)  
2009-2016  
Kingston, JM

**Civil / Residential Engineer**  
CEAC Solutions Company Ltd.  
2008-2009  
Kingston, JM

## PROFESSIONAL MEMBERSHIPS

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OWWA Source Water  
Protection, ON Canada

OWWA Automation Workshop  
(SCADA Revolution), ON  
Canada

instrumental in assisting the technical team to identify and develop the specific community servicing needs.

**Water Treatment Plant Upgrade, Rainy River First Nation, Emo, ON**

Technical lead and Project Manager for a 426 m<sup>3</sup>/day (MDD) proposed nano-filtration membrane treatment system design, expansion of building footprint, upgrades to below-grade reservoir and provision of fire protection for the community. Overall responsibilities include, identification of scope, identification of water system deficiencies, prepared design basis including equipment sizing and specification, water quality analysis, population projections, water demand estimation, hydraulic modelling, preparation of RFP document, evaluation of supplier quotations, completion of detailed cost estimates, design report and technical drawing review.

**Water Treatment Plant Upgrade, Big Grassy First Nation, Morson, ON**

Technical lead for a 542 m<sup>3</sup>/day (MDD) conventional treatment system design, expansion of building footprint, upgrades to below-grade reservoir and provision of fire protection for the community. Overall responsibilities include, identification of scope, identification of water system deficiencies, prepared design basis including equipment sizing and specification, performed water quality analysis, population projections, water demand estimation, hydraulic modelling, prepared process flow diagrams and P&IDs, preparation of RFP document, evaluation of supplier quotations, completion of detailed cost estimates, design report, technical drawing review and contract administration support.

**Water Treatment Plant Upgrade Project, Grassy Narrows First Nation, Grassy Narrows, ON**

Technical lead for 460 m<sup>3</sup>/day water treatment plant design upgrade. Identification of water system deficiencies, prepared design basis including equipment sizing and specification, performed water quality analysis, population projections, water distribution modelling, prepared process flow diagrams and P&IDs, preparation of RFP document, reviewed technical drawings, completed design brief report, contract administration and construction supervision.

**Marine Watermain Design and Installation Project, Grassy Narrows First Nation, Grassy Narrows, ON**

Technical lead for the design of approximately 1.2 km of 200 mm diameter marine distribution watermain. Development of VBA excel spreadsheets to complete hydraulic analysis of distribution watermain. Sizing of ballast weights and calculation of spacing to prevent pipe flotation confirmed through buoyancy calculation. Computer software simulated modelling of the complete distribution network for different water demand scenarios to confirm system flows and pressure including fire protection conditions

**Water Capacity Assessment, Township of Springwater, Minesing, ON**

Technical lead for the capacity assessment of three municipal water supply systems (Snow Valley, Hillsdale and Minesing) in accordance with the Ministry of Environment, Conservation and Parks (MECP) Design Guidelines for Drinking Water Systems in Ontario. Completion of detailed hydraulic modelling exercise and development of VBA excel spreadsheets to evaluate the existing infrastructure available to the communities to estimate the requirements for current and future upgrades. Computer software simulated modelling of the complete distribution networks for different water demand scenarios to confirm system flows and pressure including fire protection conditions.

**David W. Dagenais, A.Sc.T.**  
**General Manager/ Constructability and Operability**  
**Reviewer**



## **SUMMARY**

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David is a Senior Environmental Engineering Technologist within the areas of water and wastewater treatment and municipal infrastructure design and construction. His 30+ years of experience spans many projects within municipal and First Nation environments throughout Ontario and the western provinces. His experience includes various projects involving condition assessments, tender document preparation and contract administration services for water and wastewater infrastructure, roadway construction, commissioning, start-up and performance testing operations management. He has clients within the public and private sector and has considerable experience working with First Nations communities. In addition, David provides senior technical support on various types of infrastructure projects including design and constructability review and coordination and technical report preparation. He has applied his expertise in several areas including projects involving water supply, treatment, storage and distribution; wastewater collection and treatment, pumping stations including the assessment of existing infrastructure assets.

## **WATER AND WASTEWATER PROJECTS**

### **Town of Shelburne, WPCP Tertiary Treatment Upgrades Project, Shelburne, Ontario**

Provided senior project management and contract administration for the decommissioning and removal of an existing tertiary treatment sand filter and replacement cloth filter tertiary treatment technology. Also included demolition and replacement of an existing building wall, new stand-by power generator, control equipment, HVAC and other associated process work.

### **Town of Caledon, Parking Lot Expansion at Town Hall**

Provided senior project management and contract administration for the design and construction of a parking lot expansion located at the Town of Caledon municipal offices.



## **EDUCATION**

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### **Environmental Engineering Technologist**

Sault College of Applied Arts & Technology

### **Mechanical Engineering Technician Program**

Sault College of Applied Arts & Technology

## **PROFESSIONAL RECORD**

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### **General Manager**

S. Burnett & Associates Limited  
July 2016 – Present  
Orangeville, ON

### **Senior Project Manager**

S. Burnett & Associates Ltd.  
May 2013- July 2016  
Orangeville, ON

### **Senior Design and Construction Technologist**

AECOM  
September 2012 - May 2013  
St. Catharine's, ON

### **Senior Project Manager and Contract Administrator**

R.J. Burnside & Associates Ltd.  
September 2001 – July 2012  
Orangeville, ON

## **PROFESSIONAL MEMBERSHIPS**

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Certified Applied Science  
Engineering Technologist, A.Sc.T.

Ontario Association of Certified  
Engineering Technicians and  
Technologists (OACETT),  
Member

American Waterworks Association  
(AWWA), Member

### **Town of Shelburne, General Project Works**

Provided ongoing senior management and client services to the municipality for various projects within the community related to the design and construction of pavilion structures, road rehabilitation/resurfacing, drainage, etc.

### **Township of Emo Front Street & Canning Lane Watermain Expansion Project, Emo, Ontario**

Provided senior project management and contract administration for the detailed design and construction which involved the removal and replacement of existing 150mm and 200mm diameter watermain and water services. Also included fire hydrant protection, CNR crossing - jack & bore of steel casing for new watermain.

### **Town of Mono, Monora Park Pavilion Expansion, Mono, Ontario**

Provided senior project management and contract administration for the construction of a building expansion to the municipalities existing multi-function facility in the community of Mono

### **Township of Emo, Watermain Expansion Project, Emo, Ontario**

Provided senior project management and contract administration for the detailed design and construction. The project entailed the removal and replacement of existing watermain and water services, extension of new 150mm, 200mm and 300mm diameter watermain, fire hydrant protection, railway & creek crossings (jack & bore and directional drilling) in the community of Emo.

### **Township of Clearview, North Street Reconstruction**

Provided coordination and contract administration for the reconstruction of North Street storm sewers and road reconstruction for the Town of Stayner.

### **Department of Indian & Northern Affairs Canada, National Assessment of First Nation Water & Wastewater Systems (Ontario & Saskatchewan)**

Provided senior team field support for water/wastewater infrastructure site assessments and reporting in First Nations communities in approximately 30 communities across Ontario and Saskatchewan.

### **Township of Chapleau, Public Works**

Served as the Environmental & Transportation Services Director for the Township of Chapleau. Provided administration and management for public works, engineering, waste management, and airport operations. Preparation of operations and capital budgets. Provided advice and direction to Council and Steering committees. Contract administration, design and estimating functions.

## SUMMARY

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Nibhana is an Environmental Engineer with over nine years of experience in water and wastewater system design. She is proficient in the process development and design of water and wastewater treatment plants. Her experience also includes preparing equipment sizing calculations, specifications and supporting construction activities. She has worked on the preliminary and detailed design of various water and wastewater facility design and conveyance projects for public and private sector clients.

## MASTER SERVICING PLANS

### Master Servicing Plan, Town of Shelburne, ON

Technical lead responsible for preparing a master servicing plan report for the Town of Shelburne's water and wastewater system. Prepared water demand estimates, storage calculations, fire flow calculations. Reviewed wastewater flow estimate calculations and wastewater collection system calculations performed through an excel-based model. Coordinated water model development in PCSWMM with other team members. Prepared master servicing plan report and presented recommendations to the Town.

## WATER AND WASTEWATER PROJECTS

### WPCP Class EA, Shelburne, ON

Technical lead responsible for preparing ongoing WPCP Class EA report including a review of population and flow projections, identification of alternatives for treatment, comparison of alternatives, review of capital and O&M cost estimates.

### Sewage Pumping Station Design Review, Emo, ON

Performed a design review of a sewage pumping station (SPS) to determine if the SPS had capacity to handle wastewater flows from a proposed 22-lot subdivision development.



## EDUCATION

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**Master of Science**  
**Environmental Engineering**  
University of Houston

**Bachelor of Engineering**  
**Chemical Engineering**  
University of Mumbai

## PROFESSIONAL RECORD

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**Water & Wastewater Engineer**  
S. Burnett & Associates Ltd.  
July 2019 - Present  
Orangeville, ON

**Water Engineer**  
Arcadis  
February 2015 – March 2019  
Houston, TX

**Process Engineer**  
Ion Exchange India Ltd.  
February 2013 – July 2013  
Mumbai, India

**Process Engineer**  
Voltas Ltd., Water Management  
Business Division  
December 2010 – February 2013  
Mumbai, India

**PROFESSIONAL  
MEMBERSHIPS**

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Texas Board of Professional  
Engineers (TBPE)

Professional Engineer (PE)

**Sewage Pumping Station Preliminary Design, Brantford, ON**

Technical lead responsible for designing a temporary and ultimate sewage pumping station including sizing of pumps and the wet well and preparation of a technical memorandum.

**Water System Capacity Assessment Report, Springwater, ON**

Technical support for preparing population and water demand estimates, fire flow calculations, CT calculations and condition assessment spreadsheet.

**Well 7/8 Pump Replacement, Shelburne, ON**

Technical lead responsible for sizing of pumps, drawing review, RFP preparation, submittal review and contract administration support.

**Elevated Water Storage Tower, Shelburne, ON**

Technical lead for designing a new elevated water storage tower for the Town of Shelburne. Responsibilities include preparation of P&ID, equipment layout, design brief for MECP review, tender document, Geotech RFP, drawing review and overall project coordination with structural and electrical team.

**Well 3 Water Treatment Plant, Shelburne, ON**

Technical lead for designing a water treatment system for arsenic removal and enhanced disinfection for groundwater based on the results of a pilot test. Responsibilities include preparation of hydraulic calculations, P&ID, plant layout, design brief for MECP review, tender document, evaluation of supplier quotation, drawing review and overall project coordination with structural and electrical team. Also worked on a THM formation and GAC bench-scale study and report preparation as a part of GUDI analysis for the Well.

**Water Treatment Plant Retrofit Project, Mitaanjigamiing First Nation, Fort Francis, ON**

Provided technical support in reviewing design drawings and specifications for tender. Technical support for request for information (RFI) and submittal review.

**Harvest Moon Lift Station Replacement Project – Phase 2/Kirkwood Lift Station Abandonment Project, City of Houston, Texas.**

Provided technical support for lift station design, preparation of plan and profile sheets, bid forms, specifications, quantity take-off and cost estimate. Worked on project coordination with team members, sub-consultants and other agencies.

**Conceptual Design Easthaven WWTP Flow Diversion, City of Houston, Texas**

Provided technical support in the preparation of a conceptual design report for the Easthaven WWTP Flow Diversion project. Worked on alternatives evaluation, lift station and force main preliminary design, cost estimates and life cycle cost analysis for the different alternatives.

## SUMMARY

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Bulent is a Professional Engineer with over 20-years of local and international experience providing infrastructure design and engineering services to Municipal, First Nation, and private clients. He is experienced in the design, supervision, and consultancy sector in all aspects of municipal and civil infrastructure. Some of his previous hands-on experiences include water and wastewater treatment plants, roads, highways, bridges, drainage infrastructure, stormwater sanitary sewer distributions, collections, pumping stations, force mains, landfills, solid waste disposal facilities, remediations, transfer station designs, cost estimates, budgeting, construction supervision and, contract administration, including client and contractor relations. Bulent is highly experienced in condition assessment and examining based on capital cost, operation and maintenance, life cycle analysis, environmental concerns, future expandability, and public needs.

## WATER AND WASTEWATER PROJECTS

### **Elevated Water Tower Storage, Town of Shelburne, ON**

As the lead civil and process designer of the Water Tower for the Town of Shelburne, Bulent was responsible for civil and process design, coordination of permitting, design drawings, estimate, tendering assistance, and contract supervision.

### **Wastewater Treatment, Water Pollution Control Plant, Town of Shelburne, ON**

As the Process and Civil Engineer, Bulent worked on the design, tendering, and supervision assistance for the water pollution control plant, tertiary treatment upgrades. The filtration upgrade was required due to the stricter standard as well as the outdated technology. The retrofit provides efficient nutrients (N, P) removal system for post-biological treatment.

### **Road Reconstruction, Watermain, Sanitary and Stormwater, Township of Lucan-Biddulph, ON**

Lead designer for the Township's old watermain infrastructure. Bulent assisted with the renewal program for the Elm Street and Langford Drive Road infrastructure review, road resurfacing and replacement of the old watermain. His other responsibilities included the storm and sanitary sewer design, permitting, estimate and tendering assistance, site supervision services for the Township.



## EDUCATION

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### **Bachelor of Science, B.Sc.**

Environmental and Civil Engineering  
Yildiz Technical University, 1998

### **Research Associate**

Civil & Environmental Engineering  
University of Windsor, 2013

## PROFESSIONAL RECORD

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### **Civil & Environmental Engineer, P.Eng.**

S. Burnett & Associates Limited  
2018 to present  
Orangeville, ON

### **Municipal Engineer - EIT**

Dillon Consulting Limited  
2017–2018  
Chatham & Windsor, ON

### **Civil Engineer - EIT**

S. Burnett & Associates Limited  
2015–2017  
Orangeville, ON

### **Civil Designer - EIT**

Parkway Infrastructure Contractors Dragados Inc.  
2013–2015  
Windsor, ON



## **PROFESSIONAL MEMBERSHIPS**

Professional Engineer Association of Professional Engineers of Ontario

Certified Commercial UAV Pilot  
Waterloo-Wellington Flight Centre

Certified Aeronautical Radio  
Restricted Operator (ROC-A),  
Industry Canada

### **Water Treatment Plant, Chippewas of Georgina Island First Nation, ON**

As the Process and Civil Engineer, Bulent designed and coordinated civil infrastructure (access road, stormwater, and sewer), process, and instrumentation design for the Georgina Island WTP. The design was prepared by MoECC, Ten States, INAC, Health Canada standards, and regulations and submitted to provincial authorities. The plant has a daily design flow of 450 m<sup>3</sup>, with approximately 600 m length and 11 m depth extension of the raw water intake line extension on Lake Simcoe, installing 3 new pumps to raw intake low lift pumping station, pre-disinfection with Ozone, modified slow sand treatment technology, and UV system secondary disinfection, and distribution network upgrades. Cost estimation, tendering and site supervision assistance provided to the Client.

### **Water Source, Treatment, Storage, and Distribution Project, Mississauga's of Scugog Island First Nation, ON**

As the process and civil Engineer, Bulent had direct involvement in designing the water treatment plant, coordinating the watermain upgrade, and interconnection of the new water tower process design. The design works have been completed with civil, grading, and process piping design was prepared with a combination of Civil 3D and Plant 3D. Permitting, estimate, tendering, site supervision services are provided on time to the Client. The new water source, treatment, and distribution system will also lift the long-standing advisories and provide healthy access to water to the community.

### **Water Treatment Plant Distribution Upgrade Project, Naicatchewenin First Nation, ON**

Bulent was the process and civil Engineer for the WTP design with the water source of Rainy Lake. The project consisted of an intake structure design, an approximately 900 m long raw intake pipe, low lift pumping station design, pre-disinfection with Ozone supply system, and modified slow sand filtration, post-disinfection with UV, and distribution network upgrade for 20-year with fire protection 525m<sup>3</sup>/day design capacity. He was responsible for the building civil design, the WTP process piping, intake alignment, low lift pumping station design, watermain design team coordination, and site supervisors' assistance. The civil, grading, and process piping design was prepared with a combination of Autodesk software.

### **Wastewater Treatment, Izmir Metropolitan Municipality, Izmir, Turkey**

As the Process Engineer, Bulent prepared the design under ATV-DVVK methods and standards. The wastewater treatment plants consist of inlet and by-pass structure, coarse and fine screens, sewage pumping stations, aerated grit chambers, flow meter chambers, anaerobic tank for phosphorus removal, aeration tanks (nitrification+denitrification), final sedimentation tanks, UV disinfection unit, RAS pumping station, sludge storage tank, sludge dewatering building (centrifugal decanters), administration building, blower building, transformer station, guard building, and other auxiliary structures.

## **SOFTWARE EXPERTISE**

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- Autodesk Infrastructure Suite
- Civil3D
- InfraWorks
- Storm & Sanitary Analysis
- Plant 3D
- CHI-PCSWMM

## SUMMARY

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Diana is an environmental engineer-in-training (EIT) with significant experience in water, wastewater and stormwater system design, contract administration, and field inspections. She has worked on treatment, storage, distribution, and drainage projects from design through tendering, construction, and commissioning. Her experience in the field leading start-up and commissioning activities serve as an asset in her feasibility study, system evaluation and design work. In her feasibility and design work, Diana has completed detailed background reviews, environmental, technical, and economic assessments, and extensive design calculations for water, wastewater, and stormwater projects. For this work, she has completed the required approvals documentation, including Environmental Screening Forms, Project Approval Requests, Ministry of Natural Resources Work Permits, etc.

## KEY PROJECT HIGHLIGHTS

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### **Water Pollution Control Plant Class EA, Town of Shelburne, ON**

Completed quantification and analysis of the plant's ability to meet current and future wastewater treatment demands. Prepared population projections to establish the 20-year design flows. Detailed modelling of the existing wastewater system (extended aeration activated sludge, cloth filter tertiary filtration, open-channel UV disinfection, with aerobic sludge digestion). She also worked with treatment suppliers to obtain preliminary design proposals including performance guarantees and costing quotations. Completed detailed costing analysis for all potential plant upgrade alternatives, including preparation of phased construction cost estimates.

### **Municipal Engineering Works, Shelburne, ON**

Attended residential development construction meetings and completed site inspections for environmental controls, pressure testing, backflow preventer certification and watermain connections. Attended sewage pumping station start-up and commissioning activities and prepared a detailed inspection report including deficiencies and action items. Prepared Annual Wastewater Water Allocation Reports including review of historical wastewater flow data and proposed residential developments.



## EDUCATION

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### **Ontario College Graduate Certificate, Environmental Engineering Applications**

Conestoga College, Graduated with Distinction

### **Bachelor of Engineering**

University of Guelph, Graduated with Distinction

## PROFESSIONAL RECORD

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### **Civil/Environmental Designer**

S. Burnett & Associates Ltd.,  
Orangeville, ON  
Nov 2017 to present

### **Water and Wastewater Summer Student, Co-op**

County of Oxford, Woodstock, ON  
May 2017 – Sept 2017

### **Eco Building Assistant, Internship**

Preserving Earth/Fletchwitz Farm, Durham, ON  
Jun 2015 – Aug 2015

### **Wastewater Summer Student**

City of Guelph, Guelph, ON  
May 2012 – Aug 2013

### **Agricultural Research Assistant**

University of Guelph, Guelph, ON  
Oct 2010 – Dec 2010

**Wastewater Capacity Assessment, Township of Springwater, ON**

Completed a detailed hydraulic and process assessment of the wastewater treatment and collection system including the pumping stations, inlet works, sequential batch reactors, sand filter and tile bed. She reviewed and projected the build-out requirements for the area and recommended upgrades and additional studies for the wastewater system.

**Subdivision Development Feasibility Study, Fort Albany First Nation, ON**

As part of a feasibility study for development of a 100-Lot Subdivision in Fort Albany First Nation, Diana acted as technical lead for the assessment of existing infrastructure to support the development. For this assessment Diana calculated water demand estimates, fire flow and storage requirements for the community based on historical flow data and MECP design guidelines. She also prepared wastewater flow estimates to assess the size of the existing wastewater lagoon. She coordinated and reviewed lagoon sizing calculations and sewer capacity calculations. Following the assessment of the existing infrastructure Diana prepared water and wastewater servicing alternatives including Class "C" construction estimates and recommended the preferred servicing alternative for the subdivision. Additionally, Diana worked to prepare water and wastewater servicing maps for review by the Community and review agencies.

**Treatment Plant Interim Upgrades, Water and Wastewater Feasibility Study and Preliminary Design, Grassy Narrows First Nation, ON**

Diana completed the hydraulic calculations and modelling to size high lift pumps and assess pressures and flows in the distribution system. She identified and evaluated water source, treatment, distribution, and development alternatives including completion of cost analysis. Completed water storage estimates, hydraulic modelling, and stagnation review for water storage options including below-grade reservoirs, standpipes, and water towers. She also prepared Environmental Screening Form and Project Approval Report for regulatory review and approval. In addition, she developed a 20-year growth lot concept maps including water and wastewater servicing. Coordinated preparation of a fieldwork request for proposal for topographic, geotechnical, and bathymetric survey work.

**Maintenance Management System, Scugog Island First Nation, ON**

Prepared a detailed assets list for all components of the water treatment plant, water tower, well supplies and pumphouse. Diana also assembled preventative maintenance instructions and intervals for use in the HIPPO maintenance management system.

**WTP Expansion and Upgrade Design and Construction, Georgina Island First Nation, ON**

**WTP Watermain and Water Tower Design and Construction, Scugog Island First Nation, ON**

**New WTP Design and Construction, Lac Seul First Nation, ON**

**Water Treatment Plant Upgrade Design and Construction, Nigigoonsiminikaaning First Nation, ON**

Completed shop drawing reviews, addressed contractor requests for information, prepared requests for quotations, reviewed contractor quotes and issued contract change orders. She also prepared detailed deficiency summaries based on site inspections of the water treatment plant, and low lift station. She developed detailed commissioning plans and led the start-up and commissioning activities for the new slow sand and granular activated carbon filters, ozone system, UV system, chlorine injection system, upgraded pumps and associated electrical and HVAC upgrades. Coordinated and led monthly construction meetings and fulfilled contract administration duties including preparation of payment certificates, site inspection and contractor scheduling coordination. Diana reviewed and approved Contractor Operation and Maintenance Manuals and Training Programs and drafted the Engineering Operation and Maintenance Manual. Coordinated a detailed conditions assessment of the existing fire hydrants and isolation valves and prepared a Minor Capital Application for additional funding.

## Brandon Smit, P. Eng

Process Engineer

### SUMMARY

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Brandon is a Process Engineer with a degree in Chemical Engineering with education and experience in process and environmental engineering with an emphasis on sustainability. Brandon's skillsets include statistical data analysis, infrastructure assessments, water and wastewater process modelling and system optimization while focussing on the complex interactions between technology and society. At S. Burnett & Associates Limited, Brandon works with the Water Resources and Energy/Environmental teams as a Process Engineer, working on municipal, First Nation, and private infrastructure projects.

### WATER AND WASTEWATER PROJECTS

#### **Intake and Water Treatment Plant Upgrades, Township of Emo, Emo, ON**

Coordinated with agency representatives to support permitting and approval requirements for proposed in-water works to replace a deficient river intake system. Reviewed existing WTP infrastructure to identify requirements for upgrade. Reviewed technology alternatives to support ion exchange addition to process.

#### **Kenora OPP Detachment Septic System Compliance Assessment, Ontario Clean Water Agency, Kenora, ON**

Technical support responsible for the completion of a septic system investigation to confirm whether the existing system would require upgrade or replacement. Completed field investigation and detailed calculations to determine the existing system was undersized and to establish the current daily wastewater demand at the facility to serve as the basis for the proposed design. Led reporting for Client and agency review and recommendations for permitting requirements.

#### **Capital Planning Study, Atikameksheng Anishnawbek, Sudbury, ON**

Reviewed residential and commercial growth alternatives with community representatives to support 20-year expansion and proposed population growth. Assessed condition of existing community assets and their ability to support future growth.



### EDUCATION

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#### **Chemical Engineering & Society (B.Eng & Scty)**

McMaster University

### PROFESSIONAL RECORD

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#### **Process Engineer**

S. Burnett & Associates Limited  
January 2022 – Present  
Orangeville, ON

#### **Engineer-In-Training / Project Coordinator**

S. Burnett & Associates Limited  
July 2018 – January 2022  
Orangeville, ON

#### **Utilities Intern**

Labatt Brewing Company  
May 2017 – August 2017  
London, ON

#### **Research Assistant**

Vineland Research & Innovation Centre  
May 2016 – August 2016  
Vineland, ON

**PROFESSIONAL  
MEMBERSHIPS**

Professional Engineer,  
Professional Engineers  
of Ontario

**Water and Wastewater Feasibility and Land Use Planning, Agency No. 1 Communities, Fort Frances, ON**

Technical support leading cost evaluation of water and wastewater servicing alternatives considering various development models. Completed detailed water, wastewater and stormwater calculations to support preferred land-use planning alternative to support phased development of commercial, residential, recreational development. Completed evaluation matrices to assess each alternative and completed subsequent reporting of concepts to meet the proposed land use plans for Agency No. 1 Lands.

**Capital Planning Study, Eagle Lake First Nation, Dryden, ON**

Technical support responsible for the completion of population projections and proposed water and wastewater servicing alternatives. Completed road needs review and assessment of existing water infrastructure. Reviewed water and wastewater demand calculations and supported community leadership in the identification of proposed development areas to support residential, commercial, cultural and recreation development proposed within the 20-year design window.

**Water System Feasibility Study, Wabigoon Lake Ojibway Nation, Dryden, ON**

Technical lead responsible for the completion of a comprehensive infrastructure assessment to evaluate issues with existing infrastructure and evaluate solutions to support the future needs of the community. Developed population, water demand and fire flow calculations to establish future infrastructure needs and proposed system upgrades. Evaluated proposed alternatives to accommodate the 20-year design window and completed hydraulic modelling to ensure proposed upgrades satisfied growth requirements and provincial standards. Supported the development of cost estimates for proposed alternatives. Led community through land use development alternatives to support residential development within the proposed Addition to Reserve land parcel.

**Water and Wastewater Feasibility Study, Georgina Island First Nation, Sutton West, ON**

Developed various residential and commercial development strategies to support 20-year growth of the community and established growth constraints. Technical lead responsible for the development of water and wastewater demand calculations to determine future infrastructure requirements. Completed hydraulic modelling, technology review, design assessment and evaluation of alternatives, cost evaluations, and land use planning to establish a solution to service the entire island with potable drinking water and wastewater servicing, while also ensuring that fire protection can be provided.

**Wastewater and Land Use Planning Feasibility Study, Sagamok Anishnawbek First Nation, Massey, ON**

Technical lead for completion of Class C cost estimates for various servicing concepts presented in the planning study. Developed and assessed the Community Needs Survey to ensure that proposed solutions incorporated community vision and feedback. Completed an assimilative capacity study for the proposed option to establish effluent discharge constraints and ensure that proposed treatment technologies would meet federal and provincial standards.

**Water Treatment Plant Upgrade Conditions Assessment, Ojibways of Onigaming First Nation, Nestor Falls, ON**

Technical lead for the process conditions assessment to identify requirements for proposed upgrade or expansion. Completed system performance testing and hydraulic calculations to assess system capacity and the ability for the plant to meet the community's long-term drinking water needs while also complying with provincial and federal drinking water standards.

## Career Highlights

Gerhard has been providing engineering services in Canada since 1988 as an electrical power, lighting instrumentation and controls engineer. Client sectors include municipal, land development servicing, power utilities, industrial, institutional and renewable energy. Gerhard is responsible for reviewing preliminary design brief preparation, pre-design panning, cost estimating, detailed engineering design, electrical power assessments, generator sizing, PLC-SCADA integration, specifications and tendering preparation, construction inspections, shop drawing reviews, start-up assistance and commissioning, and Project Management.

## Detailed Experience

### Municipal Water Projects

Responsible for electrical detailed design, tender, construction and commissioning assistance.

- Braestone Subdivision - Water Treatment Plant, Township of Oro-Medonte, ON (2008-2016)
- Cedar Heights and Larocque Booster Pumping Stations and Standpipe, North Bay, ON (2011-2013)
- Chippewas of Rama First Nation SCADA System, Rama, ON (2011-2012)
- Churchill Water Reservoir and Booster Pumping Station, Innisfil, ON (2017-2020)
- Church Well No. 2 MCC Upgrades, Town of Bradford West Gwillimbury, Bradford, ON (2014-2015)
- Dungannon Water Supply System, Township of ACW (2021-Present)
- Hamlet of Chesterfield Inlet - Water Treatment Plant Upgrades, Nunavut (2008-2011)
- Herridge Pumping Station & Reservoir, Electrical (Hydro) Assessment and Switchgear Upgrade, Region of Peel, ON (2007-2011)
- Huron Park Water Tower, Municipality of South Huron (2009-2010)
- Innisfil Heights Water Reservoir, Innisfil, ON (2012-2015)
- Innisfil Reservoir and Booster Station, Innisfil, ON (2012-2015)
- LeFroy Reservoir and Booster Station, Innisfil, ON (2009-2012)
- Lucknow Elevated Water Storage Tank, Municipality of Huron-Kinloss, Lucknow, ON (2016-2018)
- Markdale Water Tower Replacement, Markdale (2019-Present)
- Moose Deer Point First Nation, List of New Water Treatment System for entire Community (2006-2007)
- Muskrat Dam First Nations Water Treatability Study, Muskrat Dam, ON (2011-2012)
- North Spirit Lake First Nations Water Treatment Plant Assessment, North Spirit Lake, Nunavut (2009-2010)
- Orillia WFP Chlorine Room Upgrades, Orillia (2001-Present)
- Palmerston Well #4, Minto, ON (2011-2012)
- Payette Reservoir, Penetanguishene, ON (2013-2016)
- Ripley Elevated Water Storage Tank, Municipality of Huron-Kinloss, Ripley, ON (2016-2020)
- St. Marys Reservoir and Pumphouse, St. Marys, ON (2014-2018)

## Qualifications

- 1988 BTEch., Electrical Engineering, Ryerson Polytechnical Institute, Power Option, Toronto, ON

## Professional Designations, Licences, Registrations

- Professional Engineers of Ontario
- Association of Professional Engineers, Geologists and Geophysicists of the Northwest Territories (NAPEG)
- Association of Professional Engineers and Geoscientists of the Province of Manitoba (APEGM)
- IEEE: Institute of Electrical and Electronic Engineers

## Professional Experience

- 2021 to Present Tatham Engineering Limited  
 Manager Electrical & Mechanical Engineering
- 2008 to 2021 Runge Engineering Inc.  
 Collingwood, ON  
 President
- 2002 to 2007 R.J. Burnside & Associates Limited  
 Senior Electrical Engineer, Power-Controls-Instrumentation, Building Services
- 1997 to 2002 Pilkington Glass of Canada Ltd.,  
 Advanced Project Engineer
- 1991 to 1997 MacViro Consultants Inc.  
 Electrical Engineer, Power-Controls-Instrumentation
- 1988-1991 MacLaren Engineers Inc.  
 Engineering Designer

- Stewart Road Water Reservoir and Booster Pumping Station, Collingwood, ON (2020-Present)
- Tay Area Water Treatment Plant Upgrades, Township of Tay, ON (2012-2015)
- Tay Area Water Treatment Plant Phase 2 Upgrades, Township of Tay, ON (2019-Present)
- Zurich MCC Replacement, Zurich, ON (2015-2017)

### **Municipal Wastewater Projects**

Responsible for electrical preliminary design, detailed design, tender, construction, review and commissioning assistance.

- Alliston Wastewater Treatment Plant Expansion, Alliston, ON (2012-2016)
- Beaumont Sewage Pumping Station, District of Muskoka, Bracebridge, ON (2016-2018)
- Bonarrow Meadows Sewage Pumping Station, Rockwood, ON (2017-2019)
- Chippewas of Rama First Nation SCADA System, Rama, ON (2012)
- Church Street Sewage Pumping Station, Huntsville, ON (2012-2015)
- Collingwood WPCP Generator Replacement Project, Town of Collingwood, ON (2019-2020)
- Connaught Park Sewage Pumping Station Replacement, Municipality of Kincardine, ON (2017-2018)
- Cork Street & Durham Street Sewage Pumping Stations, Town of Durham, Township of Wellington North, ON (2009-2011)
- Dill Street Sewage Pumping Station, District of Muskoka, Bracebridge, ON (2016-2018)
- Dissette Street Sewage Pumping Station, Town of Bradford West Gwillimbury, Bradford, ON (2017-2019)
- Geraldton Sewage System Upgrades, Geraldton, ON (2009-2011)
- Innisfil Sewage Pumping Station #1 Upgrades, Innisfil, ON (2014-2017)
- Kapuskasing Wastewater Treatment Plant Upgrades, Kapuskasing, ON (2009-2011)
- Municipality of Lambton Shores Electrical Upgrades, Grand Bend, ON (2017-2019)
- Mt. Brydges Main and West Sewage Pumping Stations, Municipality of Strathroy-Caradoc, ON (2010-2011)
- Mt. Brydges Sewage Treatment Plant, Municipality of Strathroy-Caradoc, ON (2011)
- New England Village (SPS#1) Sewage Pumping Station, Town of Wasaga Beach, ON (2009-2013)
- Orangeville Waste Water Pollution Control Plant Major Expansion Project, Town of Orangeville, ON (2013-2020)
- Orangeville Waste Water Pollution Control Plant, Chlorination/Dechlorination Upgrade, Orangeville, ON (2009-2010)
- Orangeville Waste Water Pollution Control Plant Headworks Upgrade, Orangeville, ON (2009-2012)
- Orangeville Water Pollution Control Plant, Electrical Distribution System Review and Standby Power Assessment, Orangeville, ON (2008-2009)
- Ritchie Stong Sewage Pumping Station, Town of Bradford West Gwillimbury, ON (original in 2006-2007 and an expansion in 2008)
- Seaforth Sewage Treatment Plant Upgrade, Municipality of Huron East, ON (2012-2014)
- Town of Innisfil PLC and SCADA Upgrades, Innisfil, ON (2014-2016)
- Wiarton WWTP Generator Project, Wiarton, ON (2016-Present)

### **Building Condition Assessments**

Responsible for visual inspection of electrical systems' age, condition in building, review of available existing as-built drawings, review of any problem areas with maintenance staff; and preparation of summary condition report, complete with cost estimate for repair/upgrades.

- Cape Croker First Nations Elementary and High School Building Condition Assessments, Cape Croker, ON (2008)
- Orillia Power Office Building Assessment, Orillia, ON (2013)
- Wellington North Power Operations Centre, Mount Forest, ON (2011)

### **Parking Lot Lighting & Street Lighting**

Provided electrical engineering services for utility coordination, detailed design, tendering assistance, contract administration and construction inspections for the traffic signal projects.

- Bayview Drive and Big Bay Point Road Improvements, Barrie, ON (2017-Present)
- Church St. Street Lighting Upgrade, Schomberg, ON (2013-Present)
- Goderich Courthouse Square, Goderich, ON (2012-2013)

- Lake Simcoe Regional Airport, Barrie, ON (2010-2011)
- Prince William Way and Maplevue Drive East Traffic Signal and Street Light Design, Barrie, ON (2018-Present)
- Town of Whitchurch-Stouffville, Downtown Street Lighting Concept Design (2018-2020)

### Recreational Trailer Parks & Campgrounds

Parks and campground projects for various municipal and private developers, providing site assessment, load list evaluation and NCCI preparations, Utility coordination, electrical power design, lighting designs (with photometrics) high voltage primary metering, tendering and construction reviews:

- Bellwood Estates, Nepean (2016-2018)
- Cherry Beach Resort, Prince Edward County (2012)
- Georgian Bay Park, Tiny Township (2016)
- Goreski's Landing, Port Perry (2016)
- Leisure Lake Park, Ruthven (2017-2018)
- Spruce Glen Park, Coboconk (2017-2018)
- SunPark Beaver Ridge Estates, Gravenhurst (2012)

### Land Development

Land development projects for various residential and commercial lands, providing electrical power service, street and parking lighting designs with photometric layouts, utility coordination, tendering and construction reviews:

- Alcona Downs Development 3, Phases 1 & 2, Innisfil, ON (2015-Present)
- Alcona Downs Development 1, Phase 2, Innisfil, ON (2013-2016)
- Alcona Downs Development 2, Phase 3, Innisfil, ON (2013-2015)
- Alcona Downs Development 1, Phase 1, Innisfil, ON (2013-2015)
- Cundles Road Commercial Development, for PenEquity Realty Corp., Barrie, ON (2009-2016)
- Georgian Meadows Student Housing Development with five building, total of 94 units, Barrie, ON (2012-2013)

- Georgian Woodlands Estates, street lighting for 58-lots, Town of The Blue Mountains, ON (2012)
- Pratt Development, 246-lot subdivision with street lighting, Town of Innisfil, ON (2012)
- Ridgewood Court, Horseshoe Ridge Subdivision, Township of Oro-Medonte, ON (2013)
- Sleeping Lion Development, Innisfil, ON (2014-Present)
- Skyline Deerhurst Highlands Estates, street lighting and hydro coordination, Huntsville, ON (2012-2013)
- Tottenham Subdivision - street lighting design for 654-lot subdivision, Tottenham, ON (2008-2013)

### Industrial and Manufacturing

Preliminary design investigation, electrical design and equipment specifications, including "bulk" offloading, commercial dispensing, access control, level control, inventory management as well as site power supply and distribution, yard lighting, grounding and building systems, instrumentation, and fuel management control system.

- Bulk Fuel Storage Tank Facility, Mathias Colomb, MB (2012-Present)
- Bulk Fuel Storage Tank Facility, Red Sucker Lake, MB (2010-Present)
- Bulk Fuel Storage Tank Facility, Garden Hill, MB (2011-2014)
- Bulk Fuel Storage Tank Facility, Bloodvein, MB (2012-2013)
- Bulk Fuel Storage Tank Facility, Pauingassi, MB (2012-2013)
- Bulk Fuel Storage Tank Facility, Poplar River, MB (2012-2013)
- Bulk Fuel Storage Tank Facility, Manto Sipi, MB (2011-2013)

Other duties include engineering peer reviews; renewable energy (Cogeneration, Solar, Wind & Hydraulic Projects); work in the Utility Sectors; Marine Facilities; Commercial, Municipal, Institutional and Private Facilities; Traffic Signal projects.



## Career Highlights

Steven Tymczuk has been providing engineering design services in Canada since 1986. Steven's expertise in controls engineering, industrial engineering, maintenance supervision and project management has provided him with a solid foundation to handle various municipal, industrial, institutional and commercial projects. This background has enabled him to provide electrical design for controls/SCADA applications that are both comprehensive from an equipment efficiency and reliability point of view, as well as, fitting in with the customer's specific philosophy. Steven has considerable experience in pre-design planning, detailed engineering design, electrical specifications, control/process narratives, tender preparation, construction inspection, commissioning, Factory Acceptance Testing, and project management.

Steven also has experience in data communication systems, security access control, surveillance and associated data system networking. Engineering services include preparation of system riser diagrams, system component layouts, equipment room layouts, communication switch / server room layouts, wiring details, component selection and specifications, rack layouts and accessory component specifications. He is also familiar with standards for Grounding and Bonding Requirements for Telecommunications.

The Canadian Industrial Security Directorate (CISD) has granted Steve with the Designated Organization Screening allowing him to work on Government of Canada contracts up to and including Protected B level. Steven also has extensive experience in PLC programming for Allen Bradley and Modicon PLCs. He is familiar with programming for Allen Bradley HMIs as well as Wonderware and Allen Bradley Factory Talk SCADA applications. He is familiar with servo drives, variable frequency drives, reduced voltage starters and temperature control.

## Detailed Experience

### Municipal Design, Water and Wastewater

#### Shelburne Engineering Services, Shelburne (2020-Present)

Provide electrical engineering services as "Town Electrical Engineer" for various "green field" and "upgrade projects". Services include reviewing electrical drawing submissions for various land development projects, water / wastewater system designs, electrical design / specifications, control narrative for PLC / redundant SCADA system operations / alarming, integration into existing SCADA system, Factory Acceptance Test results review for PLC as well as cellular and fiber optic communication requirements, tendering assistance, shop drawing reviews, construction inspections, commissioning activities, recorded drawing updates and warranty inspections.

#### Lac Seul First Nation Kejick Bay Water Treatment Plant, Kejick Bay (2016-2020)

A "green field" design to provide electrical design / specifications, control narrative for PLC / redundant SCADA system operations / alarming, integration into SCADA system, Factory Acceptance Test results review for PLC as well as cellular and requirements for the facilities c/w with low lift/high lift pump control, chlorine mixer, building instrumentation system, hydronic heating system, chlorination equipment, controls/instrumentation, three phase incoming power and power distribution equipment.

## Qualifications

1986 Bachelor of Science  
 Electrical Engineering  
 General Motors Institute (GMI)

## Professional Experience

July 2021 to Present Tatham Engineering Limited  
 Senior Electrical Designer

2008 to July 2021 Runge Engineering Inc.  
 Collingwood, ON  
 Senior Engineering Designer

2004 to 2008 R.J. Burnside & Associates Limited  
 Senior Engineering Designer

1999 to 2004 Pilkington Glass of Canada  
 Advanced Engineering

1997 to 1999 Mobil Chemical Canada Limited  
 Maintenance Team Leader

1994 to 1997 Siemens Electric Limited  
 ISAFS  
 Controls Engineer

1990 to 1994 Michelin Tire (Canada) Limited  
 Electrical Project Leader

1986 to 1990 General Motors of Canada Ltd.  
 Electrical Engineer -  
 Maintenance, Maintenance Supervisor

Additional services include tendering assistance, shop drawing reviews, construction inspections, commissioning activities, recorded drawing updates and warranty inspections.

Other municipal projects are listed below.

- Pays Plat FN WTP Upgrades, Pays Plat FN (2021-Present)
- Rainy River FN WTP Upgrades, Rainy River FN (2021 - Present)
- Wabigoon FN HVP & Generator Upgrades, Wabigoon FN (2020-Present)
- Frenchman's Head Sewage & Collection System, Lac Seul FN (2020-Present)
- Lac LaCroix FN SPS Upgrades, Lac LaCroix FN (2020-Present)
- Mitaanjigamiing WTP Upgrades, Mitaanjigamiing FN (2019-Present)
- SCADA System Upgrades, Shelburne (2020-Present)
- Shelburne Well 3 Upgrades, Shelburne (2021-Present)
- SCADA Water System Upgrades, Mono (2019-2021)
- Mississaugas of Scugog Island First Nation Water Tower, Scugog (2016-2021)
- Mississaugas of Scugog Island First Nation Water Treatment Plant, Scugog (2016-2021)
- Chippewas of Georgina Island First Nation Water Treatment Plant, Georgina Island (2016-2020)
- Shelburne Waste Water Pollution Control Plant Tertiary Filter Replacement Upgrades, Shelburne (2016-2017)
- Orangeville Waste Water Pollution Control Plant Major Expansion Project, Orangeville (2013-2018)
- Alliston Waste Water Treatment Plant Expansion, Alliston (2012-2016)
- Kapuskasing Headworks Remedial Work, Kapuskasing (2013)
- Admiral's Gate Sump Pump Upgrades, Collingwood (2013)
- Rankin Inlet Sewage Treatment Plant Upgrades, Nunavut (2012- 2014)
- Muskrat Dam First Nations Water Treatability Study, Muskrat Dam (2011-2012)
- God's Lake Narrows Sewage Treatment Plant Upgrades, Manitoba (2012)
- Red Sucker Lake Nursing Station, New Water and Sewage Treatment Plant Upgrades, Manitoba (2012-2013)
- Orangeville SCADA System, Orangeville (2010-2015)

- Chippewas of Rama First Nation SCADA System, Rama (2011-2012)
- Victoria Harbour Water Treatment Plant & SCADA System Upgrades, Victoria Harbour (2010-2015)
- North Spirit Lake First Nations Water Treatment Plant Assessment, North Spirit Lake, Nunavut (2009-2011)
- Stroud Water Treatment Plant Upgrades, Innisfil (2009-2011)
- Orangeville Waste Water Pollution Control Plant Headworks Upgrade, Orangeville (2009-2012)
- Kapuskasing Wastewater Treatment Plant Upgrades, Kapuskasing (2009-2011)
- Geraldton Sewage System Upgrades, Geraldton (2009-2011)
- Hamlet of Chesterfield Inlet - Water Treatment Plant Upgrades, Nunavut (2008-2011)
- Braestone Subdivision Water Treatment Plant, Oro-Medonte (2008-2011)
- Rainy River Sewage Pumping Station, Sunset County (2008-2011)
- Orangeville Waste Water Pollution Control Plant, Chlorination/De-chlorination Upgrade, Orangeville (2009-2010)
- Kapuskasing Sewage Treatment Plant Assessment, Kapuskasing (2009)

### **Institutional**

- Kenora Homeless Shelter (2019-Present)
- Pharmacy Sterile Prep Room Renovations, Meno Ya Win Health Centre, Sioux Lookout (2017)
- Homeless Shelter, Sioux Lookout (2016-2019)
- Temagami FN Multi-Use Facility & Business Centre, Bear Island (2015-2017)
- Wahgoshig FN Multi-Use Facility & Business Centre, Matheson (2015-Present)
- Pic River FN School, Pic River (2015-Present)
- Moose Cree First Nation Assisted Living Apartment Complex, Moose Factory (2013-Present)
- Hudson Culinary Art Training School, Hudson (2013-2014)
- Sioux Lookout Meno Ya Win Health Care Facility Long Term Care Expansion Review, Sioux Lookout (2013)
- Long Lake First Nation High School Expansion. Long Lake (2012-2013)

- Education Centre Building - Lighting Control System Upgrade, Simcoe County District School Board, Midhurst (2012)
- Kingston General Hospital, Kingston (2012)
- Collingwood General and Marine Hospital, Collingwood (2010 - 2011)
- Sioux Lookout Meno Ya Win Health Care Facility, Sioux Lookout (2005 - 2011)
- Project Manager, Collingwood YMCA Renovations, Collingwood (2010)
- Headwaters Healthcare Centre, Orangeville (2010)
- Campbellford General Hospital, Campbellford (2009)

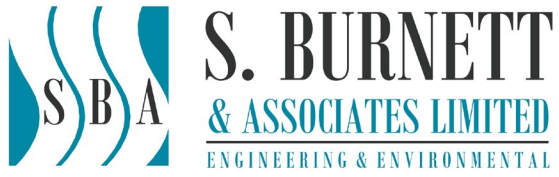
### **Industrial**

- Premier Concrete, Orangeville (2016)
- Union Energy Compressed Natural Gas (CNG) Station, Windsor (2016-2019)
- Union Energy Compressed Natural Gas (CNG) Station, Woodstock (2016-2019)
- Union Energy Compressed Natural Gas (CNG) Station, Kingston (2016-2019)
- Bulk Fuel Storage Tank Facility, Northlands First Nation, MB (2016-2018)
- Compressed Natural Gas (CNG) Station, 25 Old Eglinton, Toronto (2015-2016)
- Repair Garage Modifications, 25 Old Eglinton, Toronto (2015-2016)
- FCA Repair Garage Modifications, Windsor (2015-2016)
- Compressed Natural Gas (CNG) Station, 1050 Ellesmere, Toronto (2015-2016)
- New Gold Bulk Fuel Storage & Dispensing Facilities, Rainy River Site (2015 - 2016)

- Bulk Fuel Storage Tank Facility, Mathias Colomb, MB (2012 - 2015)
- Bulk Fuel Storage Tank Facility, Red Sucker Lake, MB (2010 - 2016)
- Atkinson Road Camp and Water Treatment Plant, Barwick (2014 - 2015)
- Bulk Fuel Storage Tank Facility, Garden Hill, MB (2011 - 2014)
- Bulk Fuel Storage Tank Facility, Bloodvein, MB (2012 - 2013)
- Bulk Fuel Storage Tank Facility, Pauingassi, MB (2012 - 2013)
- Bulk Fuel Storage Tank Facility, Poplar River, MB (2012 - 2013)
- Bulk Fuel Storage Tank Facility, Manto Sipi, MB (2011 - 2013)
- Electrical Building Services Design Engineer, Stamping Bay Expansion, F&P Factory, Tottenham (2012)

### **Municipal**

- Shelburne Engineering Services, Shelburne (2017- Present)
- SPD Upgrades, Town of the Blue Mountains (2018-2021)
- Reservoir - WWTP Generator Upgrades, Town of the Blue Mountains (2021-Present)
- Weather Measurement System, Town of the Blue Mountains (2021-Present)
- 34 Gordon EMS Upgrades, Guelph (2020-2021)
- BVCC Generator Upgrades, Town of the Blue Mountains (2019-2020)
- L.E. Shore Library Generator Upgrades, Town of the Blue Mountains (2019-2020)



## Appendix B

### Corporate Project Sheet

## Corporate Project Sheet

We have assembled a selection of our relevant projects, highlighting our experience that is applicable to this project. This is not intended to be an inclusive or exhaustive list of the experience our firm brings forward.

### Schedule B Class Environmental Assessment

#### Town of Shelburne

SBA was retained to complete a Schedule B Class Environmental Assessment (EA) to determine the preferred alternative solution for providing an adequate, safe, and reliable water supply for the Town of Shelburne for the next 20 years. Over this planning horizon, the Town of Shelburne's population is expected to grow from approximately 8,000 to 15,000. For the EA, SBA has evaluated the production of all six (6) of the Town's production wells, has undertaken hydrogeological investigations, overseen hydrogeological modelling in support of a source water protection vulnerability assessment, and has completed pumping tests with environmental monitoring to determine sustainable pumping rates and to identify any potential impacts to adjacent wells or environmental features. SBA also fulfilled the permitting requirements for transferring water from one (1) Great Lake watershed to another (intra-basin transfer). Additionally, SBA facilitated one (1) Public Information Centre using videoconferencing, with another meeting planned for early 2022. The EA is expected to be completed in late 2022, with an estimated cost of \$450,000.

### Wastewater Master Servicing Plan Environmental A

#### Town of Shelburne

SBA was retained to complete a Schedule C Class Environmental Assessment (EA) to determine the preferred alternative solution and alternative design to provide adequate wastewater treatment for the Town of Shelburne for the next 20 years. Over this planning horizon, the Town of Shelburne's population is expected to grow from approximately 8,000 to 15,000. SBA concluded that the current Water Pollution Control Plant (WPCP) did not have enough capacity to meet the projected demand, and accordingly, evaluated options that included constructing a new WPCP, or upgrading the existing facility. Having determined that upgrading the WPCP was preferred, SBA worked with the WPCP operator to review each treatment process and to compare alternative designs. SBA facilitated three (3) Public Information Centres throughout the EA process. SBA also completed an Assimilative Capacity Study which was approved by the Ministry of the Environment, Conservation and Parks and set the concentration limits for select parameters. SBA also collaborated with the conservation authority to develop a monitoring and stewardship plan for the Boyne River. The EA is expected to be completed in summer 2022 at which time SBA will commence the detailed design of the WPCP upgrade, this project has an estimated contract value of \$630,000.

### Linear Works Master Servicing Plan

#### Town of Shelburne

SBA was retained to complete a Master Servicing Plan Class Environmental Assessment for the Town of Shelburne. The EA will evaluate the Town's water and wastewater infrastructure and determine the best alternative solutions to meet the Town's needs over the next 20 years. Over this planning horizon, the Town of Shelburne's population is expected to grow from approximately 8,000 to 15,000. Specifically, the EA evaluated the Town's water quality and treatment, water storage and fire flow, water distribution and demand, wastewater collection system, and wastewater treatment capacity. Hydraulic model for the water distribution system was developed using PCSWMM software. The model was run for current and future (20 year)

scenarios. SBA facilitated one (1) Public Information Centre using videoconferencing and plans to complete the EA in summer 2022, this project has an estimated contract value of \$150,000.

### **Stormwater Management Master Servicing Plan**

#### Town of Shelburne

SBA has been retained by the Town of Shelburne to complete a Stormwater Management Master Servicing Plan (MSP). The MSP is intended to provide an environmental and community-based vision that will address future stormwater management servicing needs and existing deficiencies. This study is being completed in conjunction with the Town of Shelburne's Water and Wastewater MSPs and will support the municipality's goals to ensure proper drainage and stormwater management infrastructure and systems are in place to service the short term needs and long-term community growth. Some of the deliverables will include a comprehensive stormwater servicing strategy, detailed computer models to evaluate and assess the overall system, development of an optimal implementation plan as well as a master plan that will be prepared as part of the Class EA process.

### **Wastewater Treatment, Class C Environmental Assessment**

#### Township of Emo

SBA was retained by the Township of Emo to complete a Municipal Class C Environmental Assessment for Wastewater Treatment. SBA reviewed and assessed alternatives for wastewater treatment and determined the most appropriate solution in terms of technical feasibility, social considerations, environmental concerns and economic feasibility. Due to the success of the EA project, the Township then retained SBA to complete the detailed design, tender and to provide contract administration and inspection services for the expansion of their wastewater treatment facility. The Emo wastewater facility was expanded to provide approximately 18 to 20 years of additional capacity for the Township to accommodate additional growth due to recent mining activities in the area.

### **Water Supply Municipal Class EA**

#### Norfolk County

Banks Groundwater Engineering and Golder Associates (which was led by Ian Callum, who now works at SBA), were retained in by Norfolk County in 2011 to complete an EA to increase the water supply in Simcoe. After completing pumping tests and two public information centres, the project was placed on hold.

SBA was recently retained in by Banks Groundwater Engineering to complete a Municipal Class Environmental Assessment to increase water supply for the County of Norfolk. The goal is of this EA is to find an additional source of water for Simcoe Ontario, until pipeline connection is completed as part of the Inter-Urban Water Supply Program. The Schedule B Class EA includes public consultation, alternatives assessment and environmental analysis, following the MEA process. The EA includes evaluating a new groundwater supply well and a new section of watermain that would connect the supply well to the Simcoe Water Treatment Plant. It is anticipated that the EA will be completed within the next three months. Simcoe has a population of approximately 1,400 residents, with 64,000 residents in Norfolk County.

### **Water and Wastewater Capacity Studies**

#### Township of Springwater

This project included the detailed Capacity Assessment of the Minesing Water System, Hillsdale Water System, Snow Valley Water System and the Royal Oaks Wastewater System.

SBA assisted the Township in completing the water / wastewater capacity studies which were required to evaluate the capacity of the existing infrastructure available to the communities and to estimate the need for any upgrades required to support the current and future populations.

For each study, SBA completed a detailed assessment on each system to identify all existing deficiencies as well as provide upgrade alternatives and recommendations that were essential to providing adequate water and wastewater services to the communities. This effort identified solutions that helped to remove any immediate and significant hydraulic concerns associated with the systems while also considering compliance with effluent limits in the wastewater scope. The assessment included a full consideration of suitable alternatives, while providing recommendations that would meet the present and long-term needs for the communities. SBA also assisted the Township to develop a 20-year strategy for water/ wastewater servicing which defines infrastructure requirements, capital investments and a detailed strategy for implementation to address any challenges involved with the construction and operation of any newly recommended infrastructure.

This assessment ultimately allowed the Municipality to use the information as a monitoring tool to efficiently estimate the number of people the current and/or future systems can sustain and also provide a suitable way to determine where growth is most appropriate by taking into account where water can be treated and supplied for potable use and wastewater can be effectively collected, treated and discharged.

Populations serviced between these communities ranged from approximately 800 to 5,100 individuals with water demand flow rates ranging from 400 to 4,700 m<sup>3</sup>/d.

### **Emo Kaemingh Subdivision Sewage Pumping Station** Township of Emo

SBA completed a review of the existing Kaemingh subdivision sewage pumping station. The subdivision has an estimated existing residential population of 148 persons along with a church and a school. The subdivision was proposed to be developed with 22 new residential and three (3) commercial lots in three phases. The existing SPS was designed to handle a peak flow of approximately 8 L/s.

SBA conducted an evaluation to determine if the SPS could accommodate more flows from the proposed development in each phase. The calculations and information was presented in a technical memorandum format to the client. The SPS was proposed to be upgraded prior to progressing to Phase 2 and Phase 3 of the development to be able to handle a peak flow of 9.2 L/s. The total project cost for the upgrade was estimated to be around \$300,000 including engineering fees.

### **Monora Condominium Wastewater System** Orangeville, Ontario

SBA was recently retained by a local condominium association which is responsible for a 177 single unit housing development in the Orangeville area. The community has been experiencing difficulties and malfunctions with its existing communal sewage treatment plant. SBA was retained to complete an assessment of the existing facility, review of the structural and process failures and to develop an action plan for resolving the sewage treatment plant issues. SBA has completed a detailed site investigation and review and recently submitted an evaluation report and recommendations to help resolve the current sewage treatment issues.

## Long-Term Servicing Strategies – Water Supply and Sewage Treatment Master Servicing Plan, Schedule B Class EA

### Tow of Orangeville

Stephen was the Project Manager responsible for the completion of a long-term servicing strategy and Master Servicing Plan for the Town of Orangeville completed under the Municipal Class EA process. The plan explored several short-term options to alleviate a water supply shortage that the Town was facing including reduced industrial once through cooling water use, existing well re-habilitation, an industrial water use audit and computer modelling to implement a maximum week storage analysis versus maximum day. The study also identified and evaluated medium- and long-term water supply options including the addition of new well supplies, increasing existing well supplies, maximum aquifer yield analysis and the option of connecting to a surface water supply in the Region of Peel/Brampton. The project also identified medium- and long-term sewage treatment alternatives including upgrades to the existing WPCP, construction of a new WPC for the increased population, construction of a new WPCP for the entire community and connection to the Region of Peel/Brampton system. The Master Servicing Plan and report outlined and provided approval for the necessary Schedule A projects and Schedule B projects and identified all Schedule C projects which would require an additional EA process. The study ultimately clarified and provided budgeting for a 20-year implementation plan which included the addition of new well supplies, improvements to the water distribution system and storage and an extensive upgrade and additional tertiary filters and sludge digestion, thickening and storage at the WPCP.

## Kenora OPP Detachment Septic System Compliance Assessment

### OCWA

The Ontario Provincial Police (OPP), Kenora Detachment septic system was assigned corrective actions by the Ministry of the Environment, Conservation and Parks (MECP) in 2021. SBA was retained by Ontario Clean Water Agency (OCWA) to complete a site investigation, wastewater flow estimates and associated reporting and permitting to address the correct actions identified by the MECP.

SBA reviewed site conditions to confirm that the system has been operating above capacity and could not keep up with ongoing demands at the OPP facility. SBA developed recommendations based on the information available which established that an upgraded system will be required to support the long-term wastewater needs of the facility.

SBA worked closely with OCWA, MECP and facility staff to establish various scenarios to assess that wastewater demand of the facility and ensure reliable wastewater servicing can be restored. SBA continues to work with OCWA while additional information is procured to substantiate flow estimates.

## Water Treatment Plant and Distribution Assessment

### Armstrong Local Service Board

In 2021, SBA was retained by the Armstrong Local Service Board to conduct an assessment of the Water Treatment Plant and Distribution System to evaluate the existing system to identify the needs and prioritize the required upgrades to meet current provincial regulations. The Armstrong Water Treatment Plant (WTP) has a groundwater source. Two (2) groundwater wells (No. 1 and No. 2A) provide raw water to the WTP at a maximum capacity of 1632 m<sup>3</sup>/d. The water treatment process of the Armstrong WTP includes pressure filtration, UV disinfection and



post-treatment chemical disinfection by chlorine injection. The WTP has an underground water storage reservoir for treated water storage. The reservoir includes two (2) water cells and one (1) pumping well equipped with three (3) high lift pumps and one (1) high volume (fire) pump. The Armstrong water distribution system was constructed in 1985. The system serves approximately 130 dwellings and several businesses through nearly 10 km of watermain within Armstrong. A total of 30 fire hydrants are located throughout the water distribution system.

Following the detailed site review, SBA undertook a water consumption analysis, calculated the required volume of treated water to be held in the reservoir, analyzed the treated water quality and water distribution parameters, followed by estimating the construction costs for the recommended upgrades and repairs. Upon the analysis, SBA recommended an instrumentation, diesel generator and UV system upgrade. Additionally, the replacement of the pH analyzer, chlorine analyzer, turbidity meter, treated water flowmeter, level analyzer and the fire pump controller. Decommissioning, removal and the watermain repairs and dead-end elimination were also recommended.

### **Capital Planning Study and Infrastructure Work**

#### **Atikameksheng Anishnawbek First Nation**

SBA is currently providing an update to Atikameksheng First Nation's 2001 Capital Planning Study. This update will provide costing and a detailed road map for the community's infrastructure needs for the next 20 years, including water and wastewater infrastructure servicing. As part of this work our team is completing an assessment of existing infrastructure, establishing needs for future development and population growth, comparing alternative servicing options, and developing cost estimates (capital, O&M, Lifecycle) to implement upgrades and expansion of water and wastewater infrastructure. Atikameksheng has a current population of roughly 500 people.

In September 2021, SBA retained to complete design and contract administration project for the Atikameksheng community. The Project consists of designing 3 km of new bypass road, 2 km of road resurfacing, replacing up to 35 septic systems, replacing a watermain, and design upgrades to the community centre. The project has an aggressive timeline and has required strong project management and creative solutions to keep the project on track. As an outcome to the septic assessment, several facilities were found to be non-compliant with effluent leaching from the systems. These systems have been prioritized and updated detailed septic system upgrades designs are underway to ensure that these systems can be brought into compliance with Provincial and Federal septic design guidelines. Water treatment for the community is supplied by the Greater City of Sudbury through a Municipal Transfer Service Agreement.

### **Capital Planning Study**

#### **Eagle Lake First Nation**

SBA is currently undertaking an update to Eagle Lake's previous Capital Planning Study. The update will be used to support infrastructure and economic development activities for the community over the next 20 years, including establishing the plan for water and wastewater infrastructure servicing. As part of this work our team is completing an assessment of existing infrastructure, establishing needs for future development and population growth, comparing alternative servicing options, and developing cost estimates (capital, O&M, Lifecycle) to implement upgrades and expansion of water and wastewater infrastructure. Atikameksheng has a current population of roughly 400 people. Flows and construction costs estimates are currently being developed.

## Feasibility Studies and Assessment

### Various Communities

#### **HDCi Brantford Development, City of Brantford**

SBA has been retained to complete the detailed design portion of the sewage collection and pumping system for a functional servicing report supporting a large residential and commercial development in the City of Brantford, Ontario. The development includes several blocks of commercial development and required both a large temporary sewage pumping station and collection system design as well as an ultimate sewage pumping station and collection system design to meet the needs of the development as well as the City.

#### **Wastewater Treatment Assessment, Mississaugas of Scugog Island First Nation (MSIFN)**

SBA was retained to complete a detailed review and assessment of the state of the wastewater treatment plant in Mississaugas of Scugog Island First Nation (MSIFN). The purpose of this project was to ensure the facility met the operational and treatment requirements to achieve the preferred level of treatment service. Included in the report was a structural and sewage treatment process options analysis for the existing facility.

#### **Water Supply, Treatment, Distribution/ Storage Feasibility Study, MSIFN**

SBA was retained to complete the water supply, treatment, and distribution/ storage feasibility study for the Mississaugas of Scugog Island First Nation. SBA assisted the community in developing a feasibility plan that will guide, monitor, and control the growth of their community in the future, concerning infrastructure and the provision of essential services. SBA has determined the best solution for developing an effective and reliable water source, treatment, and distribution system that will allow the community to remove a long-standing DWA as well as meeting the long-term servicing needs for the growth of the community. SBA also assisted MSIFN in obtaining \$6.9 M in SCF funding and \$4.3 M in ISC funding towards the \$12.5 M solution.

#### **Water System Feasibility Study and Preliminary Design, Grassy Narrows First Nation**

SBA was retained to complete a water feasibility study for Grassy Narrows First Nation. The community's current WTP had reached design capacity and was not capable of effectively treating the surface water supply to meet Ontario Federal Standards. The study has been completed to determine a long-term solution to the water supply, treatment, storage, and distribution, including servicing options for remote sections of the community referred to as Mission Hill and Snake Point.

#### **Water and Wastewater Feasibility Study, Couchiching First Nation**

SBA was retained by Couchiching First Nation to provide a Water and Wastewater Feasibility Study. The community currently makes use of municipal-type servicing agreements with the Town of Fort Frances. This feasibility study was intended to review the 20-year growth requirements of the community and associated water and wastewater projections. This information was used to assess whether the Town of Fort Frances had the remaining capacity to support the long-term needs of Couchiching First Nation or whether standalone servicing for both water and wastewater may be more applicable to the community. SBA continues to work with Couchiching First Nation to finalize plans for development.

#### **Water System Feasibility Study, Wabigoon Lake First Nation**

SBA was retained by Wabigoon Lake Ojibway Nation (WLON) to provide a Water System Feasibility Study. WLON has identified the need to develop a plan that will guide, monitor and enhance the growth of their community into the future, with respect to the community

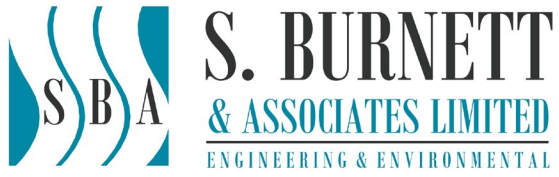
infrastructure, and the provision of essential water services. The overarching goal of the Feasibility Study was to determine the best solution for developing an effective and reliable water supply, treatment, storage and distribution system for WLON. SBA is currently finalizing the Final Report of the feasibility study and is working closely with WLON and review agency to finalize the feasibility study and transition into design and construction of an upgraded plant. The total cost for the feasibility study is \$149,525.

#### **Wastewater System Feasibility Study, Sagamok First Nation**

SBA was retained along with Tulloch Engineering to complete a Wastewater Feasibility Study for Sagamok First Nation in 2017. SBA was responsible for the completion of wastewater demand calculations, an assimilative capacity assessment and recommendations of proposed treatment technology alternatives and preferred solutions. For each alternative identified, SBA prepared Class C cost estimates to detail capital cost implications in addition to operation and maintenance and lifecycle costing. SBA also established criteria to incorporate community member feedback into the development of the plan to increase engagement for the proposed system upgrade and expansion.

#### **Water Treatment Plant Assessment, Moose Deer Point First Nation**

Due to the age of the WTP, SBA performed an initial WTP Assessment for Moose Deer Point First Nation in January 2020 to understand the ongoing issues at that time. In July 2021, SBA was retained by Moose Deer Point First Nation to conduct a detailed WTP Assessment to identify the necessary upgrades and address the current slow sand filter leaking issues as well as other emergencies. This work included an on-site WTP Assessment which was completed on July 8<sup>th</sup>, 2021. SBA then worked with the Operations Team to coordinate inspection of the system by treatment supplier MS Filter and by a specialized electrical team. This work included a full review of each water treatment and pumping process, structural review of the slow sand tankage and building walls and floor and a detailed electrical/mechanical review. Following this, SBA proceeded with reporting, developing cost estimates and QA/QC review. SBA is now working with the Community, the Ogemawahj Tribal Council, and Indigenous Services Canada to explore funding opportunities and prepare funding applications.



## Appendix A

### Project Team Information

## Key Personnel Form

Staff roles and experience is provided in detail following this table. For detailed project descriptions please refer to **Appendix B**. We have provided only the project title under project description within this table. For further details on roles and responsibilities each person held for the projects listed in this table, please refer to the Curriculum vitae.

Name	Project Role	% of Total Hours*	Years of Experience	Relevant Project Experience		
				Project Description	Roles and Responsibilities	Reference Information
Stephen Burnett, P.Eng.	Project Manager and Client Liaison	7%	25+	Schedule B Class EA, Wastewater Master Servicing Plan EA, Linear Works Master Servicing Plan (all Town of Shelburne)	Project Manager, QA/QC, Client Liaison	Jim Moss, Director, Development and Operations (519) 925-2600 ext. 227 jmoss@shelburne.ca OR Denyse Morrissey, Chief Administrative Officer (519) 925-2600 ext. 226 dmorrissey@shelburne.ca
				Wastewater Treatment Assessment and Water Supply, Treatment, Distribution/Storage Feasibility Study for Mississaugas of Scugog Island First Nation	Project Manager, QA/QC, Client Liaison	Chief Kelly LaRocca (905) 989-3337 klarocca@scugogfirstnation.com OR Colleen Kennedy, Band Manager (905) 985-3337 ext. 265 ckennedy@scugogfirstnation.com

				Wastewater Treatment, Class C EA for the Township of Emo	Project Manager, QA/QC, Client Liaison	Crystal Gray, Interim CAO/ Treasurer (807) 482-2378 Deputy.treasurer@emo.ca OR Jason Smith jsmith@emo.ca
Ian Callum, PMP, M.Sc.	QA/QC Reviewer and Environmental Assessment Expert	12%	20+	Schedule B Class EA, Wastewater Master Servicing Plan EA, Linear Works Master Servicing Plan (all Town of Shelburne)	EA Lead/ Expert, QA/QC Review and Technical Support	Jim Moss, Director, Development and Operations (519) 925-2600 ext. 227 jmoss@shelburne.ca OR Denyse Morrissey, Chief Administrative Officer (519) 925-2600 ext. 226 dmorrissey@shelburne.ca
				Water Supply Municipal Class EA for Norfolk County	EA Lead/ Expert, QA/QC Review and Project Manager	Bill Banks, Principal Hydrologist for Banks Groundwater Engineering Limited (519) 829-4808 bill.banks@banksgroundwater.ca
				Capital Planning Study and Infrastructure Work for Atikameksheng Anishnawbek	EA Lead/ Expert, Project Manager	Gary Naponse, Director of Housing and Infrastructure (705) 692-3651 Director.housing-infra@wfn.com
Daymar Creary, P.E., B.Sc.	Hydraulics and Modelling Lead	16%	12	Water and Wastewater Capacity Studies for the Township of Springwater	Technical Lead, Hydraulics and Modelling	Curtis Parker, Senior Operations Manager (519) 939-1111 cparker@ocwa.com

				Water System Feasibility Study and Preliminary Design, Grassy Narrows First Nation	Technical Lead	Robert Williamson, Project Manager (807) 407-7051 or (807) 925-2201 robertcwilliamson2@gmail.com
				Capital Planning Study and Infrastructure Work for Atikameksheng Anishnawbek	Technical Support	Gary Naponse, Director of Housing and Infrastructure (705) 692-3651 Director.housing-infra@wfn.com
David Dagenais, A.Sc.T.	Cost Estimator	1%	30+	Schedule B Class EA, Wastewater Master Servicing Plan EA, Linear Works Master Servicing Plan (all Town of Shelburne)	Cost Estimator	Jim Moss, Director, Development and Operations (519) 925-2600 ext. 227 jmoss@shelburne.ca OR Denyse Morrissey, Chief Administrative Officer (519) 925-2600 ext. 226 dmorrissey@shelburne.ca
				Water and Wastewater Capacity Studies for the Township of Springwater	Cost Estimator	Curtis Parker, Senior Operations Manager (519) 939-1111 cparker@ocwa.com
				Wastewater Treatment, Class C EA for the Township of Emo	Cost Estimator	Crystal Gray, Interim CAO/ Treasurer (807) 482-2378 Deputy.treasurer@emo.ca OR Jason Smith

						jsmith@emo.ca
Bulent Uslu, P.Eng.	Engineering Support (CAD Lead)	4%	20+	Schedule B Class EA and Linear Works Master Servicing Plan (all Town of Shelburne)	Engineering and CAD Support	Jim Moss, Director, Development and Operations (519) 925-2600 ext. 227 jmoss@shelburne.ca OR Denyse Morrissey, Chief Administrative Officer (519) 925-2600 ext. 226 dmorrissey@shelburne.ca
				Wastewater Treatment Assessment and Water Supply, Treatment, Distribution/Storage Feasibility Study for Mississaugas of Scugog Island First Nation	Engineering and CAD Support	Chief Kelly LaRocca (905) 989-3337 klarocca@scugogfirstnation.com OR Colleen Kennedy, Band Manager (905) 985-3337 ext. 265 ckennedy@scugogfirstnation.com
Nibhana Suvarna, M.Sc., B.Eng.	Engineering Support (including QA/QC support)	11%	6	Schedule B Class EA, Wastewater Master Servicing Plan EA, Linear Works Master Servicing Plan (all Town of Shelburne)	Technical Lead (i.e., Engineering Support) and Hydraulics and Modelling Support	Jim Moss, Director, Development and Operations (519) 925-2600 ext. 227 jmoss@shelburne.ca OR Denyse Morrissey, Chief Administrative Officer (519) 925-2600 ext. 226 dmorrissey@shelburne.ca
				Water and Wastewater	Engineering Support	Curtis Parker, Senior Operations Manager



				Capacity Studies for the Township of Springwater		(519) 939-1111 cparker@ocwa.com
				Sewage Pumping Station Assessment For the Township of Emo	Engineering Support	Crystal Gray, Interim CAO/ Treasurer (807) 482-2378 Deputy.treasurer@emo.ca OR Jason Smith jsmith@emo.ca
Diana Beattie, B.Eng., EIT	Engineering Support	29%	5	Schedule B Class EA, Wastewater Master Servicing Plan EA, and Linear Works Master Servicing Plan (all Town of Shelburne)	Engineering Support and Modelling	Jim Moss, Director, Development and Operations (519) 925-2600 ext. 227 jmoss@shelburne.ca OR Denyse Morrissey, Chief Administrative Officer (519) 925-2600 ext. 226 dmorrissey@shelburne.ca
				Water and Wastewater Capacity Studies for the Township of Springwater	Engineering Support and Hydraulic and Process Assessment	Curtis Parker, Senior Operations Manager (519) 939-1111 cparker@ocwa.com
Brandon Smit, P.Eng.	Technical Support	18%	4	Wastewater Treatment, Class C EA for the Township of Emo	Technical Support	Crystal Gray, Interim CAO/ Treasurer (807) 482-2378 Deputy.treasurer@emo.ca OR Jason Smith jsmith@emo.ca
				Kenora OPP Detachment	Technical Support	Jeff St. Pierre, Regional Manager – Northwestern Ontario Hub

				Septic System Compliance Assessment		(705) 943-5578 JSt.Pierre@ocwa.com
				Capital Planning Study and Infrastructure Work for Atikameksheng Anishnawbek	Technical Support	Gary Naponse, Director of Housing and Infrastructure (705) 692-3651 Director.housing-infra@wfn.com
*remaining 2% assigned to administrative staff						

A summary description of each staff member's qualifications and experience is provided herein. Our senior staff offer more than 30-years of expertise in water and wastewater system feasibility, treatment design and evaluation engineering, including public consultation, approvals and permitting, tendering and contract administration for First Nation projects.

**Project Manager and Client Liaison**

Stephen Burnett, P.Eng.  
**Principal**

**Years of Experience:**  
25+

Stephen has extensive experience in project management, water supply, treatment and wastewater infrastructure design, system assessments and feasibility, capital planning, infrastructure evaluation and construction, environmental assessment and contract administration. Over the past 26-years, he has provided engineering services and expert advice to First Nation and Municipal clients in the areas of WTP design, water and wastewater system feasibility studies, community development planning, environmental assessments, infrastructure servicing and assessment, and capital planning for future growth.

Stephen has fulfilled the role as project manager and lead engineer on relevant planning projects over the past 13-years as the Principal of SBA. Prior to founding SBA, Stephen acted as a project manager and lead design engineer for numerous related infrastructure projects and cumulatively has 26-years of experience in this role.

Stephen was also the Ontario lead for the water and wastewater National Assessment completed by Indigenous Services Canada (ISC) to assess all First Nation systems across Canada. His Master Servicing Plan experience is extensive, having led 20 Municipal Class EAs and Federal EAs.

Stephen is very familiar with engineering and environmental regulations at the Municipal, Provincial and Federal levels. His diverse experience enables him to provide comprehensive services relating to both infrastructure assessment and MEA and CEEA planning initiatives as well as detailed design support for civil, environmental and structural infrastructure projects. Stephen is very experienced in examining services based on capital cost, operation and maintenance, life cycle analysis, environmental concerns, future expandability and public input so that communities can plan for the long-term.

Stephen has excellent interpersonal skills in public consultation and presentations. He has the unique ability to explain relatively complex technical matters for understanding by the general public. Stephen has also project managed several multi-discipline teams in complex design and assessment projects for various Municipal and First Nation clients.

**Stephen will be the Project Manager for this project, with support from Ian. Stephen and Ian have completed numerous successful projects in these respective roles. In addition to**

**project management, Stephen will also provide senior engineering oversight to the team and liaise with the Municipality.**

**QA/QC Reviewer, PM Support and EA Expert**

Ian Callum, PMP., M.Sc.  
**Senior Environmental Project Manager**

**Years of Experience: 20**

**Ian** is a certified Project Management Professional with more than 20-years of experience in environmental planning projects that include planning, feasibility, permitting, and environmental assessment projects. Ian has overseen technical leads, built strong client relationships, supervised and guided report writing, developed and implemented community engagement plans, and overseen project interactions with regulators.

Ian has led a wide range of environmental assessments, including Municipal Class Environmental Assessments (EAs) for the Town of Shelburne that include EAs to increase wastewater treatment capacity, to increase water supply, and a Water/Wastewater Master Servicing Plan EA. Ian has also led the EA for a water supply project for the County of Norfolk.

Ian has also led other community infrastructure projects, including the Capital Planning Study for Atikameksheng Anishnawbek First Nation, as well overseeing a design project that includes the replacement of a section of watermain and designing the replacement of up to 35 septic systems.

**For this project, Ian will lead the EA, which will include planning and delivering project consultation, developing the alternative solution evaluation matrix, and overseeing all aspects of EA reporting. Ian will provide QA/QC review for all report content prior to submission to the Municipality of Wawa project team. Ian will also provide project management support to the Project Manager by developing a project status reporting template and overseeing deliverables, project schedule, project budget, and project risks.**

**Hydraulics and Modelling Lead**

Daymar Creary, P.E., B.Sc.  
**Senior Professional Engineer**

**Years of Experience: 12**

**Daymar** has over 10-years of applied design and project management experience. Daymar is experienced in water and wastewater systems, structural assessment of commercial and residential developments, stormwater management designs, geotechnical works, highway engineering, structural analysis and subdivision planning, design and implementation and highway design and construction supervision. He has worked on water infrastructure projects (i.e., upgrades, feasibility studies, capacity assessments, design) for over eight (8) First Nation communities across Ontario.

Daymar has been the technical lead for a number of water and wastewater infrastructure Feasibility Studies for First Nation client across Ontario. Daymar is SBA's lead for hydraulic modelling for

each of our water and wastewater projects with First Nation and Municipal clients.

**For this project, Daymar will be the Hydraulics and Modelling Lead, bringing forward his experience on other projects with a similar servicing and capacity size as Wawa. Daymar will also providing engineering support to the team throughout this project.**

#### Cost Estimator

David Dagenais, A.Sc.T.  
Senior Constructability  
and Operability  
Reviewer

Years of Experience:  
30+

**David** is a Senior Design and Construction Technologist within the areas of water and wastewater treatment and municipal infrastructure design and construction. His 30+ years of experience spans many projects within First Nation and Municipal environments throughout Ontario and the western provinces. His experience includes various projects involving assessments, approvals, specification document preparation and contract administration for buildings, water and wastewater infrastructure, commissioning, start-up and performance testing operations management. David utilizes his extensive construction and contract administration experience to provide accurate cost estimates. He has applied his expertise in several areas including projects involving water supply, treatment, storage and distribution, wastewater collection and treatment, pumping stations including the assessment of existing infrastructure assets.

**David will be the Cost Estimator for this project, utilizing his extensive knowledge of Municipal infrastructure. He will also be available to the team to assess alternatives and recommendations.**

<p><b>Engineering Support (including QA/QC support)</b></p> <p>Nibhana Suvarna, M.Sc., B.Eng.</p> <p><b>Water and Wastewater Designer</b></p> <p><b>Years of Experience: 6</b></p>	<p><b>Nibhana</b> is an Environmental Engineer with over six (6)-years of experience in water and wastewater system design. She is proficient in the process development and design of water and wastewater treatment plants. Her experience also includes preparing equipment sizing calculations, specifications and supporting construction activities. She has worked on the preliminary and detailed design of various water and wastewater facility design and conveyance projects for public and private sector clients. Her experience includes reviewing equipment supplier quotations for compliance with design requirements and standards. She has also worked on the preparation of the basis of design reports/design briefs, tender documents, process flow diagrams, P&amp;IDs, equipment layouts, hydraulic calculations and equipment sizing for these projects.</p> <p><b>For this project, Nibhana will be the primary engineering support as well as providing QA/QC review of Brandon’s work. She will bring forward her extensive experience working with the Town of Shelburne on their water and wastewater infrastructure projects including the Master Servicing Plan.</b></p>
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<p><b>Engineer Support</b></p> <p>Bulent Uslu, P.Eng. <b>CAD Designer</b></p> <p><b>Years of Experience: 20+</b></p>	<p><b>Bulent</b> is a Professional Engineer with vast municipal infrastructure, design, and engineering experience at local, provincial, and international levels. This includes water and wastewater treatment plants, roads, highways, bridges, drainage infrastructure, stormwater sanitary sewer distributions, collections, pumping stations, force mains, landfills, solid waste disposal facilities, remediations, transfer station designs, cost estimates, budgeting, construction supervision and, contract administration, including client and contractor relations. In addition to being a CAD Designer, Bulent provides hydraulic and modelling support to our team.</p> <p><b>For this project, Bulent will provide engineering support for the project and will specifically focus on hydraulic and modelling under Daymar’s direction.</b></p>
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**Engineering Support**  
Diana Beattie, B.Eng.  
**Engineer-In-Training**

**Years of Experience: 5**

**Diana** is an environmental engineer-in-training (EIT) with significant experience in water, wastewater and stormwater system design, contract administration, and field inspections. She has worked on treatment, storage and distribution projects from design through tendering, construction, and commissioning. Her experience in the field leading start-up and commissioning activities serves as an asset in her design work. In addition to her technical experience, Diana is a talented writer and has prepared numerous report requirements for projects as well as providing QA/QC review for reports generated by other team members.

During her tenure with SBA, Diana has worked on a multitude of water infrastructure projects such as new construction, upgrades and expansions for First Nation communities. She supported these projects by completing hydraulic calculations, sizing pumps, developing alternatives for cost analysis, agency consultation, preparing design briefs, shop drawings review, addressed contract requests and change orders and other contract administration duties as required. Additionally, Diana has worked with treatment technology suppliers through proposal review, detailed design, construction and commissioning. Diana also has expertise related to sanitary servicing.

**Diana's primary role for this project will be to lead the reporting efforts of this project. She will bring forward her SCADA expertise to support Nibhana for that aspect of the project.**

**Technical Support**

Brandon Smit, P.Eng.  
**Process Engineer**

**Years of Experience: 4**

**Brandon** is a process engineer with experience in water and wastewater system design and contract administration. He has worked on supply, treatment, storage, and distribution projects from feasibility and design through tendering, construction, and commissioning. In his feasibility and design work, Brandon has completed detailed background reviews, environmental, technical, and economic assessments, and extensive design calculations for water and wastewater projects. Brandon is familiar with the scope of the project due to his involvement in various water projects throughout the OTC communities such as recent projects in MSIFN and GIFN. Most recently, Brandon finalized the Georgina Island First Nation East/South Water Servicing Feasibility Study.

**Brandon will provide technical support for this project. In addition, Brandon is located in Wawa and therefore will be present for meetings in-person and will be available to collection information as needed.**

In addition to the SBA team, SBA may retain the services of Tatham Engineering Limited for SCADA support and we have carried a limited budget for this scope of work. SBA has an established relationship with Tatham, and our firms have collaborated on numerous water and wastewater projects over the past 13 years. Due to our extensive working relationship, we

consider our joint expertise to be one (1) team on all our projects. All members of SBA's team listed in this proposal have worked with Tatham staff to various extents on previous projects and these relationships will carry through to this project.

Tatham Engineering Limited is a team of multi-disciplinary project managers, engineers, technical staff and industry professionals who have been challenged to provide consulting engineering, design and construction services. Tatham Engineering Limited has offices in Collingwood, Barrie, Bracebridge, Orillia and Ottawa.

**Senior Electrical Engineer**

Gerhard Runge, P.Eng.

**Years of Experience:**  
30+

Gerhard Runge has been providing engineering services in Canada since 1988 as an electrical power, lighting instrumentation and controls engineer. Client sectors include municipal, land development servicing, utility companies, industrial, institutional and renewable energy. Gerhard is responsible for equipment inspections and assessments, preliminary design brief preparation, pre-design planning, cost estimating, detailed engineering design, electrical (hydro) assessments, generator assessments, PLC-SCADA integration, specification and tendering preparation, construction inspections, shop drawing reviews, start-up assistance and commissioning, and project management.

**For this project, Gerhard will provide QA/ QC for SCADA support.**

**Senior Electrical Designer**

Steven Tymczuk, B.Sc.,  
B.Eng.

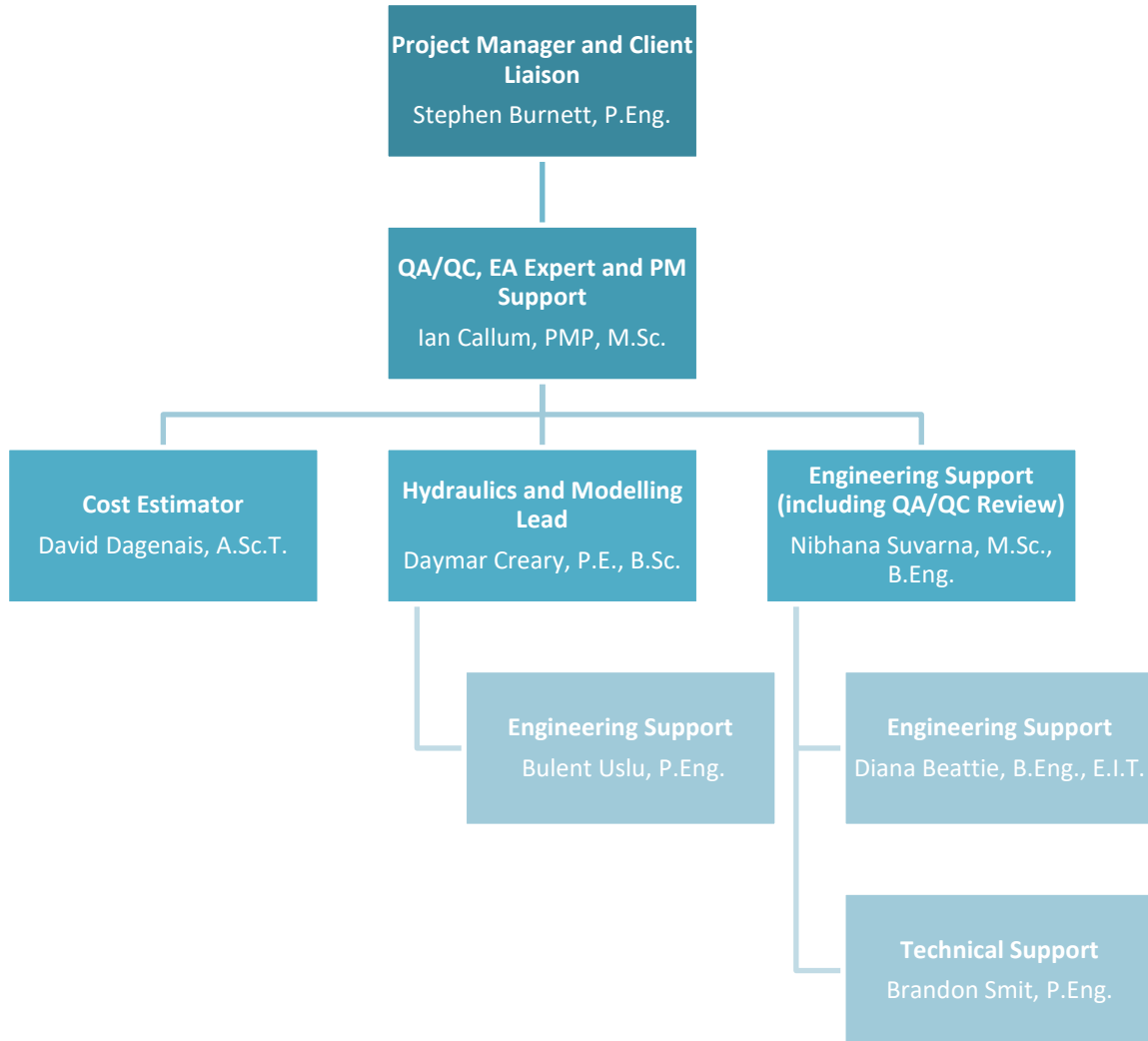
**Years of Experience:**  
30+

Steven Tymczuk has been providing engineering design services in Canada since 1986. Steven's expertise in controls engineering, industrial engineering, maintenance supervision and project management has provided him with a solid foundation to handle various municipal, industrial, institutional and commercial projects. This background has enabled him to provide electrical design for controls/ SCADA applications that are both comprehensive from an equipment efficiency and reliability point of view, as well as, fitting in with the customer's specific philosophy. Steven has considerable experience in proposal writing, pre-design planning, detailed engineering design, electrical specification writing, control/ process narrative writing, tender preparation, electrical construction inspection and reports, commissioning and reports, factory acceptance testing and reports, budget tracking and project management.

**For this project, Steven will lead the SCADA support scope.**

An organizational chart showcasing SBA's staff is provided below. SBA's project team identified in this proposal will utilize the internal chain of command as presented in the organization chart. Nibhana and Diana will coordinate with Tatham Engineering Limited for the SCADA scope.





## **SUMMARY**

Stephen has extensive experience in Project Management, Infrastructure Planning, Municipal Engineering, and Engineering Design and Construction. Over the past 26 years, Stephen has provided engineering services to Municipal, First Nation and private clients in the area of Environmental Assessments, water supply and treatment, infrastructure servicing, sanitary sewage treatment and disposal, road and bridge assessment and design and planning and design for commercial and residential housing.

## **MASTER SERVICING PLANS**

Stephen has extensive Master Servicing experience and has completed numerous Class EA studies following both the MEA Class EA Municipal process as well as the Federal EA process. The following are just a few Class Environmental Assessments that Stephen has led:

- Town of Orangeville, Schedule 'A' and Watermain Replacement EA
- Town of Orangeville, Water & Wastewater Master Servicing Plan, Schedule 'B' EA
- Town of Orangeville, WPCP Effluent Disinfection Schedule 'B' EA
- Town of Orangeville, WPCP Headwaters EA Addendum
- Town of Shelburne, Water & Wastewater Master Servicing Plan, Schedule 'B' EA
- Town of Shelburne, Water Storage, Schedule 'B' EA
- Town of Shelburne, Water Supply, Schedule 'B' EA
- Town of Shelburne, WPCP Upgrade, Schedule 'C' EA
- Township of Emo, Recycling Facility & Transfer Station, Schedule 'B' EA
- Township of Emo, Sewage Lagoon Expansion, Schedule 'C' EA
- Township of Emo, Water & Wastewater Master Servicing Plan, Schedule 'B' EA
- Township of Emo, Water Treatment Plant (WTP) Upgrade, Schedule 'B' EA
- County of Norfolk, Wildlife Crossing, Schedule 'B' EA
- Alderville First Nation, SMW Solar Facility EA & Renewable Energy Approval
- Ballantrae Golf & Country Club, Wastewater Servicing EA
- ClubLink Golf, Risk Assessment Water & Wastewater
- Mansfield, Water & Wastewater Servicing Master Plan
- Moose Deer Point First Nation, Water Supply & Treatment, Federal EA

Stephen has also led numerous Federal EA's including:

- Detroit River International Crossing, Federal EA Peer Reviewed Lead, Walpole Island First Nation



### **EDUCATION**

**B.Sc. Civil Engineering (Honours)**

University of Waterloo

### **PROFESSIONAL RECORD**

#### **Principal**

S. Burnett & Associates Ltd.  
2009 – Present  
Orangeville, ON

#### **Client Services Manager Eastern Canada and USA**

Neegan Burnside Ltd.  
2009  
Orangeville, ON

#### **Senior Project Manager / Orangeville Branch Manager**

R.J. Burnside & Associates  
Ltd.  
1995 - 2008  
Orangeville, ON

### **PROFESSIONAL MEMBERSHIPS**

Association of Professional  
Engineers of Ontario

Ontario Society of  
Professional Engineers

OWWA Member

- UXO Investigation, Camp Ipperwash, DND
- Tri Municipality (Kenora) Solid Waste EA Peer Review
- Highway 400 Expansion, MTO, Peer Review

## **WATER AND WASTEWATER PROJECTS**

### **Water Treatment Plant Planning and Design**

Stephen has led numerous multi-disciplined project teams for water treatment plant (WTP) feasibility, planning and design. Stephen has extensive municipal servicing and WTP construction experience and has project managed several teams in complex design and assessment projects for First Nation communities and Ontario Municipalities. The following is a list of recent WTP facilities:

- Town of Orangeville, GUDI Well WTP Design Upgrades
- Town of Orangeville, Six WTP Designs for GUDI Treatment
- Town of Orangeville, Watermain Replacement Matthew/McCarthy Streets
- Town of Shelburne, Well 7 Construction, Water Tower Rehabilitation, Well 3 Arsenic Removal, Well 7/8 Class EA
- Township of Emo, WTP Expansion
- Township of Emo, Watermain Looping & Extensions
- Big Grassy First Nation, WTP Upgrades Feasibility, Design, & Contract Administration
- Chippewas of Georgina Island First Nation, Water Treatment Feasibility Study & WTP Design & Contract Administration
- Grassy Narrows First Nation, WTP Feasibility Study & Interim WTP Upgrades
- Lac Seul First Nation, WTP Feasibility, Design & Contract Administration
- Lac Seul First Nation, WTP, Storage & Distribution
- Mississaugas of Scugog First Nation, WTP, Tower & Watermain Distribution
- Mitaanijigamiing First Nation, WTP Expansion
- Moose Deer Point First Nation, WTP, Tower & Distribution
- Naicatchewenin First Nation, WTP, Storage & Distribution
- Nawash First Nation, WTP Upgrade
- Wabigoon Lake Ojibway Nation, WTP Interim Upgrades

### **Sewage Treatment Planning and Design**

Stephen has led multiple sewage treatment feasibility, planning and design projects and has extensive sewage servicing experience. The following is a list of recent projects:

- Town of Orangeville, Digester Upgrades
- Town of Orangeville, Effluent Disinfection Upgrades
- Town of Orangeville, WPCP Headworks Sewage Pumping Station
- Town of Shelburne, Tertiary Filter Expansion
- Town of Shelburne, Wastewater Treatment Plant Class EA
- Township of Emo, Sewage Lagoon Expansion
- Township of Emo, SPS Retrofit
- Couchiching First Nation, Five Mile Dock Sewage Treatment & Collection
- Lac Seul First Nation, Sewage Lagoon & Collection System
- Mississaugas of Scugog First Nation, Wastewater Treatment Plant, Health & Safety Assessment
- Wauzhushk Onigum First Nation, Sewage Treatment Plant

## **SUMMARY**

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Ian is a certified project management professional with 20-years of experience planning infrastructure, energy, and renewable energy projects for municipalities, First Nations, and private sector clients. In addition to managing small to multi-million-dollar infrastructure projects, Ian has considerable experience in community engagement, environmental assessment and permitting, and securing funding on behalf of our clients.

## **INFRASTRUCTURE PLANNING**

### **Town of Shelburne Master Servicing Plan EA**

Ian is currently the project manager for two separate Master Servicing Plan EAs, the first for water and wastewater, and the second for stormwater. These EA will help the Town to plan its infrastructure needs for the next 20-years. In addition to overseeing EA reporting, Ian led all aspects of project consultation.

### **Municipal Class Environmental Assessment (EA) for Increased Capacity of the Water Pollution Control Plant, Town of Shelburne**

Project Manager for the Schedule Class Municipal Class EA which assessed option and selected the preferred means for the Town to meet wastewater treatment demand for the next 20-years. The project included the completion of an assimilative capacity study and determining monitoring requirements and stewardship opportunities in consultation with the Nottawasaga Conservation Authority.

### **Long-Term Well Project, Town of Shelburne**

As Project Manager, Ian led the harmonized provincial and federal (CEAA) environmental assessment to find a new water supply for the Town of Shelburne. The project resulted in locating a new deep well aquifer and the construction of two new production wells. Ian led the environmental assessment process, public, First Nations, and agency consultation and managed project technical studies, including natural heritage, archaeological, and hydrogeological assessments. The project was



## **EDUCATION**

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### **M.Sc. Agriculture and Biosystems Engineering**

McGill University, Montreal, Quebec, 2001

### **B.Sc. Environmental Science**

University of Guelph, Ontario, 1997

## **PROFESSIONAL RECORD**

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### **Senior Environmental Project Manager**

S. Burnett & Associates Limited  
2019  
Orangeville, ON

### **Callum Consulting**

EA Project Manager  
2017 - 2018  
Guelph, ON

### **EcoMetrix Inc.**

EA Project Manager  
2015 - 2016  
Mississauga, ON

### **Golder Associates**

Project Manager/EA Specialist  
2008 - 2014  
Mississauga, ON

## **PROFESSIONAL MEMBERSHIPS**

Project Management Professional  
Project Management Institute  
(PMI), July 7, 2013

## **AREAS OF EXPERTISE**

- Project management
- Provincial and Federal environmental assessments
- Waste management
- Energy and infrastructure planning
- Funding Opportunity Identification and Management

successfully constructed and is under operation. Ian is currently managing a new EA to plan the Town's water supply for the next 20-years.

### **Community of Simcoe Additional Water Supply – Class EA, Norfolk County**

Ian is managing the Class EA for the site selection and construction of a new water supply well for the Norfolk County. For this project, Ian adapted consultation plan to successfully alleviate public concerns regarding the project.

### **Atikameksheng Anishnawbek First Nation Capital Planning Study**

As Project Manager, Ian is currently overseeing updating Atikameksheng's 2001 Capital Planning Study. This update will provide costing and a detailed road map for the community's infrastructure needs for the next 20 years. A key aspect of this project that Ian is overseeing is community engagement program, as well as coordinating with Indigenous Services Canada.

### **Atikameksheng Anishnawbek First Nation Design Project**

Ian is currently managing a large design and contract administration project for the Atikameksheng community. The Project consists of designing 3 km of new bypass road, 2 km of road resurfacing, replacing up to 35 septic systems, replacing a watermain, and design upgrades to the community centre. The project has an aggressive timeline and has required strong project management and creative solutions to keep the project on track.

### **Iskatewizaagegan #39 Waste Management Program, Iskatewizaagegan #39 First Nation**

Developed a Solid Waste Management Program for the community. The Program included the development of a plan for the safe closure of an existing landfill and future waste management, including the introduction of recycling services. Ian provided senior leadership and oversight to the project, specifically concerning report writing and soliciting input from Chief and Council, the Bimose Tribal Council, and Indigenous Services Canada (ISC). Ian also led preliminary funding discussions with ISC.

### **Dufferin County Engineering Services for the Rehabilitation/ Replacement of Six Structures.**

As Project Manager, Ian is currently managing the design, environmental permitting, tendering, and contract administration for the replacement or rehabilitation of six culverts and bridges in the County of Dufferin.

## SUMMARY

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Daymar is a civil and environmental engineer with 13-years of applied design and project management experience. He is a reliable and resourceful professional with the demonstrated ability to implement innovative engineering solutions in the civil and environmental engineering industry. With his diverse involvement in consulting engineering, contract administration and site supervision, Daymar is experienced in stormwater management designs, geotechnical works, highway engineering, structural analysis and water and wastewater system designs. He is also knowledgeable of environmental, safety and quality control philosophies in the construction industry, and can apply construction methodologies and building codes consistent with Canadian standards. He has applied his experience in several areas including, hydraulic modelling of water and wastewater systems, structural assessment of commercial and residential developments, subdivision planning, peer reviews, highway design, contract administration and construction supervision.

## WATER AND WASTEWATER PROJECTS

### **Water System Feasibility Study, Grassy Narrows First Nation, Grassy Narrows, ON**

Technical lead responsible for preparing and coordinating the completion of the feasibility study including background and needs report, interim and final reporting, water quality assessment, population projections, identification of the source, water treatment, storage and distribution options for the community and preparation of detailed capital, O&M and life cycle cost estimates.

### **Water System Feasibility Study, Wabigoon Lake Ojibway Nation, Dryden, ON**

Ongoing project management role responsible for coordinating and overseeing the completion of the feasibility study including background and needs report, interim and final reporting, water quality assessment, population projections, identification of the source, water treatment, storage and distribution options for the community and preparation of detailed capital, O&M and life cycle cost estimates.

### **Capital Planning Study, Atikameksheng Anishnawbek First Nation, Naughton, ON**

Ongoing senior technical support to update the community's 2001 CPS and to develop a road map for the community's infrastructure needs for the next 20 years. Daymar has been



## EDUCATION

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**Bachelor of Science (Honours) Civil & Environmental Engineering**  
University of the West Indies St. Augustine, Trinidad

## PROFESSIONAL RECORD

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**Civil & Environmental Engineer**  
S. Burnett & Associates Limited  
2017-Present  
Orangeville, ON

**Construction Supervisor**  
Torino Drywall  
2016-2017  
Vaughan, ON

**Project Engineer /Manager**  
Rural Water Supply Ltd.  
(formerly Carib Engineering)  
2009-2016  
Kingston, JM

**Civil / Residential Engineer**  
CEAC Solutions Company Ltd.  
2008-2009  
Kingston, JM

## PROFESSIONAL MEMBERSHIPS

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OWWA Source Water Protection, ON Canada

OWWA Automation Workshop (SCADA Revolution), ON Canada

instrumental in assisting the technical team to identify and develop the specific community servicing needs.

**Water Treatment Plant Upgrade, Rainy River First Nation, Emo, ON**

Technical lead and Project Manager for a 426 m<sup>3</sup>/day (MDD) proposed nano-filtration membrane treatment system design, expansion of building footprint, upgrades to below-grade reservoir and provision of fire protection for the community. Overall responsibilities include, identification of scope, identification of water system deficiencies, prepared design basis including equipment sizing and specification, water quality analysis, population projections, water demand estimation, hydraulic modelling, preparation of RFP document, evaluation of supplier quotations, completion of detailed cost estimates, design report and technical drawing review.

**Water Treatment Plant Upgrade, Big Grassy First Nation, Morson, ON**

Technical lead for a 542 m<sup>3</sup>/day (MDD) conventional treatment system design, expansion of building footprint, upgrades to below-grade reservoir and provision of fire protection for the community. Overall responsibilities include, identification of scope, identification of water system deficiencies, prepared design basis including equipment sizing and specification, performed water quality analysis, population projections, water demand estimation, hydraulic modelling, prepared process flow diagrams and P&IDs, preparation of RFP document, evaluation of supplier quotations, completion of detailed cost estimates, design report, technical drawing review and contract administration support.

**Water Treatment Plant Upgrade Project, Grassy Narrows First Nation, Grassy Narrows, ON**

Technical lead for 460 m<sup>3</sup>/day water treatment plant design upgrade. Identification of water system deficiencies, prepared design basis including equipment sizing and specification, performed water quality analysis, population projections, water distribution modelling, prepared process flow diagrams and P&IDs, preparation of RFP document, reviewed technical drawings, completed design brief report, contract administration and construction supervision.

**Marine Watermain Design and Installation Project, Grassy Narrows First Nation, Grassy Narrows, ON**

Technical lead for the design of approximately 1.2 km of 200 mm diameter marine distribution watermain. Development of VBA excel spreadsheets to complete hydraulic analysis of distribution watermain. Sizing of ballast weights and calculation of spacing to prevent pipe flotation confirmed through buoyancy calculation. Computer software simulated modelling of the complete distribution network for different water demand scenarios to confirm system flows and pressure including fire protection conditions

**Water Capacity Assessment, Township of Springwater, Minesing, ON**

Technical lead for the capacity assessment of three municipal water supply systems (Snow Valley, Hillsdale and Minesing) in accordance with the Ministry of Environment, Conservation and Parks (MECP) Design Guidelines for Drinking Water Systems in Ontario. Completion of detailed hydraulic modelling exercise and development of VBA excel spreadsheets to evaluate the existing infrastructure available to the communities to estimate the requirements for current and future upgrades. Computer software simulated modelling of the complete distribution networks for different water demand scenarios to confirm system flows and pressure including fire protection conditions.

**David W. Dagenais, A.Sc.T.**  
**General Manager/ Constructability and Operability**  
**Reviewer**



## **SUMMARY**

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David is a Senior Environmental Engineering Technologist within the areas of water and wastewater treatment and municipal infrastructure design and construction. His 30+ years of experience spans many projects within municipal and First Nation environments throughout Ontario and the western provinces. His experience includes various projects involving condition assessments, tender document preparation and contract administration services for water and wastewater infrastructure, roadway construction, commissioning, start-up and performance testing operations management. He has clients within the public and private sector and has considerable experience working with First Nations communities. In addition, David provides senior technical support on various types of infrastructure projects including design and constructability review and coordination and technical report preparation. He has applied his expertise in several areas including projects involving water supply, treatment, storage and distribution; wastewater collection and treatment, pumping stations including the assessment of existing infrastructure assets.

## **WATER AND WASTEWATER PROJECTS**

### **Town of Shelburne, WPCP Tertiary Treatment Upgrades Project, Shelburne, Ontario**

Provided senior project management and contract administration for the decommissioning and removal of an existing tertiary treatment sand filter and replacement cloth filter tertiary treatment technology. Also included demolition and replacement of an existing building wall, new stand-by power generator, control equipment, HVAC and other associated process work.

### **Town of Caledon, Parking Lot Expansion at Town Hall**

Provided senior project management and contract administration for the design and construction of a parking lot expansion located at the Town of Caledon municipal offices.



## **EDUCATION**

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### **Environmental Engineering Technologist**

Sault College of Applied Arts & Technology

### **Mechanical Engineering Technician Program**

Sault College of Applied Arts & Technology

## **PROFESSIONAL RECORD**

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### **General Manager**

S. Burnett & Associates Limited  
July 2016 – Present  
Orangeville, ON

### **Senior Project Manager**

S. Burnett & Associates Ltd.  
May 2013- July 2016  
Orangeville, ON

### **Senior Design and Construction Technologist**

AECOM  
September 2012 - May 2013  
St. Catharine's, ON

### **Senior Project Manager and Contract Administrator**

R.J. Burnside & Associates Ltd.  
September 2001 – July 2012  
Orangeville, ON



## **PROFESSIONAL MEMBERSHIPS**

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Certified Applied Science  
Engineering Technologist, A.Sc.T.

Ontario Association of Certified  
Engineering Technicians and  
Technologists (OACETT),  
Member

American Waterworks Association  
(AWWA), Member

### **Town of Shelburne, General Project Works**

Provided ongoing senior management and client services to the municipality for various projects within the community related to the design and construction of pavilion structures, road rehabilitation/resurfacing, drainage, etc.

### **Township of Emo Front Street & Canning Lane Watermain Expansion Project, Emo, Ontario**

Provided senior project management and contract administration for the detailed design and construction which involved the removal and replacement of existing 150mm and 200mm diameter watermain and water services. Also included fire hydrant protection, CNR crossing - jack & bore of steel casing for new watermain.

### **Town of Mono, Monora Park Pavilion Expansion, Mono, Ontario**

Provided senior project management and contract administration for the construction of a building expansion to the municipalities existing multi-function facility in the community of Mono

### **Township of Emo, Watermain Expansion Project, Emo, Ontario**

Provided senior project management and contract administration for the detailed design and construction. The project entailed the removal and replacement of existing watermain and water services, extension of new 150mm, 200mm and 300mm diameter watermain, fire hydrant protection, railway & creek crossings (jack & bore and directional drilling) in the community of Emo.

### **Township of Clearview, North Street Reconstruction**

Provided coordination and contract administration for the reconstruction of North Street storm sewers and road reconstruction for the Town of Stayner.

### **Department of Indian & Northern Affairs Canada, National Assessment of First Nation Water & Wastewater Systems (Ontario & Saskatchewan)**

Provided senior team field support for water/wastewater infrastructure site assessments and reporting in First Nations communities in approximately 30 communities across Ontario and Saskatchewan.

### **Township of Chapleau, Public Works**

Served as the Environmental & Transportation Services Director for the Township of Chapleau. Provided administration and management for public works, engineering, waste management, and airport operations. Preparation of operations and capital budgets. Provided advice and direction to Council and Steering committees. Contract administration, design and estimating functions.

## SUMMARY

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Nibhana is an Environmental Engineer with over nine years of experience in water and wastewater system design. She is proficient in the process development and design of water and wastewater treatment plants. Her experience also includes preparing equipment sizing calculations, specifications and supporting construction activities. She has worked on the preliminary and detailed design of various water and wastewater facility design and conveyance projects for public and private sector clients.

## MASTER SERVICING PLANS

### Master Servicing Plan, Town of Shelburne, ON

Technical lead responsible for preparing a master servicing plan report for the Town of Shelburne's water and wastewater system. Prepared water demand estimates, storage calculations, fire flow calculations. Reviewed wastewater flow estimate calculations and wastewater collection system calculations performed through an excel-based model. Coordinated water model development in PCSWMM with other team members. Prepared master servicing plan report and presented recommendations to the Town.

## WATER AND WASTEWATER PROJECTS

### WPCP Class EA, Shelburne, ON

Technical lead responsible for preparing ongoing WPCP Class EA report including a review of population and flow projections, identification of alternatives for treatment, comparison of alternatives, review of capital and O&M cost estimates.

### Sewage Pumping Station Design Review, Emo, ON

Performed a design review of a sewage pumping station (SPS) to determine if the SPS had capacity to handle wastewater flows from a proposed 22-lot subdivision development.



## EDUCATION

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**Master of Science**  
**Environmental Engineering**  
University of Houston

**Bachelor of Engineering**  
**Chemical Engineering**  
University of Mumbai

## PROFESSIONAL RECORD

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**Water & Wastewater Engineer**  
S. Burnett & Associates Ltd.  
July 2019 - Present  
Orangeville, ON

**Water Engineer**  
Arcadis  
February 2015 – March 2019  
Houston, TX

**Process Engineer**  
Ion Exchange India Ltd.  
February 2013 – July 2013  
Mumbai, India

**Process Engineer**  
Voltas Ltd., Water Management  
Business Division  
December 2010 – February 2013  
Mumbai, India

**PROFESSIONAL  
MEMBERSHIPS**

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Texas Board of Professional  
Engineers (TBPE)

Professional Engineer (PE)

**Sewage Pumping Station Preliminary Design, Brantford, ON**

Technical lead responsible for designing a temporary and ultimate sewage pumping station including sizing of pumps and the wet well and preparation of a technical memorandum.

**Water System Capacity Assessment Report, Springwater, ON**

Technical support for preparing population and water demand estimates, fire flow calculations, CT calculations and condition assessment spreadsheet.

**Well 7/8 Pump Replacement, Shelburne, ON**

Technical lead responsible for sizing of pumps, drawing review, RFP preparation, submittal review and contract administration support.

**Elevated Water Storage Tower, Shelburne, ON**

Technical lead for designing a new elevated water storage tower for the Town of Shelburne. Responsibilities include preparation of P&ID, equipment layout, design brief for MECP review, tender document, Geotech RFP, drawing review and overall project coordination with structural and electrical team.

**Well 3 Water Treatment Plant, Shelburne, ON**

Technical lead for designing a water treatment system for arsenic removal and enhanced disinfection for groundwater based on the results of a pilot test. Responsibilities include preparation of hydraulic calculations, P&ID, plant layout, design brief for MECP review, tender document, evaluation of supplier quotation, drawing review and overall project coordination with structural and electrical team. Also worked on a THM formation and GAC bench-scale study and report preparation as a part of GUDI analysis for the Well.

**Water Treatment Plant Retrofit Project, Mitaanjigamiing First Nation, Fort Francis, ON**

Provided technical support in reviewing design drawings and specifications for tender. Technical support for request for information (RFI) and submittal review.

**Harvest Moon Lift Station Replacement Project – Phase 2/Kirkwood Lift Station Abandonment Project, City of Houston, Texas.**

Provided technical support for lift station design, preparation of plan and profile sheets, bid forms, specifications, quantity take-off and cost estimate. Worked on project coordination with team members, sub-consultants and other agencies.

**Conceptual Design Easthaven WWTP Flow Diversion, City of Houston, Texas**

Provided technical support in the preparation of a conceptual design report for the Easthaven WWTP Flow Diversion project. Worked on alternatives evaluation, lift station and force main preliminary design, cost estimates and life cycle cost analysis for the different alternatives.

## SUMMARY

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Bulent is a Professional Engineer with over 20-years of local and international experience providing infrastructure design and engineering services to Municipal, First Nation, and private clients. He is experienced in the design, supervision, and consultancy sector in all aspects of municipal and civil infrastructure. Some of his previous hands-on experiences include water and wastewater treatment plants, roads, highways, bridges, drainage infrastructure, stormwater sanitary sewer distributions, collections, pumping stations, force mains, landfills, solid waste disposal facilities, remediations, transfer station designs, cost estimates, budgeting, construction supervision and, contract administration, including client and contractor relations. Bulent is highly experienced in condition assessment and examining based on capital cost, operation and maintenance, life cycle analysis, environmental concerns, future expandability, and public needs.

## WATER AND WASTEWATER PROJECTS

### **Elevated Water Tower Storage, Town of Shelburne, ON**

As the lead civil and process designer of the Water Tower for the Town of Shelburne, Bulent was responsible for civil and process design, coordination of permitting, design drawings, estimate, tendering assistance, and contract supervision.

### **Wastewater Treatment, Water Pollution Control Plant, Town of Shelburne, ON**

As the Process and Civil Engineer, Bulent worked on the design, tendering, and supervision assistance for the water pollution control plant, tertiary treatment upgrades. The filtration upgrade was required due to the stricter standard as well as the outdated technology. The retrofit provides efficient nutrients (N, P) removal system for post-biological treatment.

### **Road Reconstruction, Watermain, Sanitary and Stormwater, Township of Lucan-Biddulph, ON**

Lead designer for the Township's old watermain infrastructure. Bulent assisted with the renewal program for the Elm Street and Langford Drive Road infrastructure review, road resurfacing and replacement of the old watermain. His other responsibilities included the storm and sanitary sewer design, permitting, estimate and tendering assistance, site supervision services for the Township.



## EDUCATION

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### **Bachelor of Science, B.Sc.**

Environmental and Civil Engineering  
Yildiz Technical University, 1998

### **Research Associate**

Civil & Environmental Engineering  
University of Windsor, 2013

## PROFESSIONAL RECORD

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### **Civil & Environmental Engineer, P.Eng.**

S. Burnett & Associates Limited  
2018 to present  
Orangeville, ON

### **Municipal Engineer - EIT**

Dillon Consulting Limited  
2017–2018  
Chatham & Windsor, ON

### **Civil Engineer - EIT**

S. Burnett & Associates Limited  
2015–2017  
Orangeville, ON

### **Civil Designer - EIT**

Parkway Infrastructure Contractors Dragados Inc.  
2013–2015  
Windsor, ON

## **PROFESSIONAL MEMBERSHIPS**

Professional Engineer Association of Professional Engineers of Ontario

Certified Commercial UAV Pilot  
Waterloo-Wellington Flight Centre

Certified Aeronautical Radio  
Restricted Operator (ROC-A),  
Industry Canada

### **Water Treatment Plant, Chippewas of Georgina Island First Nation, ON**

As the Process and Civil Engineer, Bulent designed and coordinated civil infrastructure (access road, stormwater, and sewer), process, and instrumentation design for the Georgina Island WTP. The design was prepared by MoECC, Ten States, INAC, Health Canada standards, and regulations and submitted to provincial authorities. The plant has a daily design flow of 450 m<sup>3</sup>, with approximately 600 m length and 11 m depth extension of the raw water intake line extension on Lake Simcoe, installing 3 new pumps to raw intake low lift pumping station, pre-disinfection with Ozone, modified slow sand treatment technology, and UV system secondary disinfection, and distribution network upgrades. Cost estimation, tendering and site supervision assistance provided to the Client.

### **Water Source, Treatment, Storage, and Distribution Project, Mississauga's of Scugog Island First Nation, ON**

As the process and civil Engineer, Bulent had direct involvement in designing the water treatment plant, coordinating the watermain upgrade, and interconnection of the new water tower process design. The design works have been completed with civil, grading, and process piping design was prepared with a combination of Civil 3D and Plant 3D. Permitting, estimate, tendering, site supervision services are provided on time to the Client. The new water source, treatment, and distribution system will also lift the long-standing advisories and provide healthy access to water to the community.

### **Water Treatment Plant Distribution Upgrade Project, Naicatchewenin First Nation, ON**

Bulent was the process and civil Engineer for the WTP design with the water source of Rainy Lake. The project consisted of an intake structure design, an approximately 900 m long raw intake pipe, low lift pumping station design, pre-disinfection with Ozone supply system, and modified slow sand filtration, post-disinfection with UV, and distribution network upgrade for 20-year with fire protection 525m<sup>3</sup>/day design capacity. He was responsible for the building civil design, the WTP process piping, intake alignment, low lift pumping station design, watermain design team coordination, and site supervisors' assistance. The civil, grading, and process piping design was prepared with a combination of Autodesk software.

### **Wastewater Treatment, Izmir Metropolitan Municipality, Izmir, Turkey**

As the Process Engineer, Bulent prepared the design under ATV-DVVK methods and standards. The wastewater treatment plants consist of inlet and by-pass structure, coarse and fine screens, sewage pumping stations, aerated grit chambers, flow meter chambers, anaerobic tank for phosphorus removal, aeration tanks (nitrification+denitrification), final sedimentation tanks, UV disinfection unit, RAS pumping station, sludge storage tank, sludge dewatering building (centrifugal decanters), administration building, blower building, transformer station, guard building, and other auxiliary structures.

## **SOFTWARE EXPERTISE**

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- Autodesk Infrastructure Suite
- Civil3D
- InfraWorks
- Storm & Sanitary Analysis
- Plant 3D
- CHI-PCSWMM

## SUMMARY

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Diana is an environmental engineer-in-training (EIT) with significant experience in water, wastewater and stormwater system design, contract administration, and field inspections. She has worked on treatment, storage, distribution, and drainage projects from design through tendering, construction, and commissioning. Her experience in the field leading start-up and commissioning activities serve as an asset in her feasibility study, system evaluation and design work. In her feasibility and design work, Diana has completed detailed background reviews, environmental, technical, and economic assessments, and extensive design calculations for water, wastewater, and stormwater projects. For this work, she has completed the required approvals documentation, including Environmental Screening Forms, Project Approval Requests, Ministry of Natural Resources Work Permits, etc.

## KEY PROJECT HIGHLIGHTS

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### **Water Pollution Control Plant Class EA, Town of Shelburne, ON**

Completed quantification and analysis of the plant's ability to meet current and future wastewater treatment demands. Prepared population projections to establish the 20-year design flows. Detailed modelling of the existing wastewater system (extended aeration activated sludge, cloth filter tertiary filtration, open-channel UV disinfection, with aerobic sludge digestion). She also worked with treatment suppliers to obtain preliminary design proposals including performance guarantees and costing quotations. Completed detailed costing analysis for all potential plant upgrade alternatives, including preparation of phased construction cost estimates.

### **Municipal Engineering Works, Shelburne, ON**

Attended residential development construction meetings and completed site inspections for environmental controls, pressure testing, backflow preventer certification and watermain connections. Attended sewage pumping station start-up and commissioning activities and prepared a detailed inspection report including deficiencies and action items. Prepared Annual Wastewater Water Allocation Reports including review of historical wastewater flow data and proposed residential developments.



## EDUCATION

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### **Ontario College Graduate Certificate, Environmental Engineering Applications**

Conestoga College, Graduated with Distinction

### **Bachelor of Engineering**

University of Guelph, Graduated with Distinction

## PROFESSIONAL RECORD

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### **Civil/Environmental Designer**

S. Burnett & Associates Ltd.,  
Orangeville, ON  
Nov 2017 to present

### **Water and Wastewater Summer Student, Co-op**

County of Oxford, Woodstock, ON  
May 2017 – Sept 2017

### **Eco Building Assistant, Internship**

Preserving Earth/Fletchwit Farm, Durham, ON  
Jun 2015 – Aug 2015

### **Wastewater Summer Student**

City of Guelph, Guelph, ON  
May 2012 – Aug 2013

### **Agricultural Research Assistant**

University of Guelph, Guelph, ON  
Oct 2010 – Dec 2010

**Wastewater Capacity Assessment, Township of Springwater, ON**

Completed a detailed hydraulic and process assessment of the wastewater treatment and collection system including the pumping stations, inlet works, sequential batch reactors, sand filter and tile bed. She reviewed and projected the build-out requirements for the area and recommended upgrades and additional studies for the wastewater system.

**Subdivision Development Feasibility Study, Fort Albany First Nation, ON**

As part of a feasibility study for development of a 100-Lot Subdivision in Fort Albany First Nation, Diana acted as technical lead for the assessment of existing infrastructure to support the development. For this assessment Diana calculated water demand estimates, fire flow and storage requirements for the community based on historical flow data and MECP design guidelines. She also prepared wastewater flow estimates to assess the size of the existing wastewater lagoon. She coordinated and reviewed lagoon sizing calculations and sewer capacity calculations. Following the assessment of the existing infrastructure Diana prepared water and wastewater servicing alternatives including Class "C" construction estimates and recommended the preferred servicing alternative for the subdivision. Additionally, Diana worked to prepare water and wastewater servicing maps for review by the Community and review agencies.

**Treatment Plant Interim Upgrades, Water and Wastewater Feasibility Study and Preliminary Design, Grassy Narrows First Nation, ON**

Diana completed the hydraulic calculations and modelling to size high lift pumps and assess pressures and flows in the distribution system. She identified and evaluated water source, treatment, distribution, and development alternatives including completion of cost analysis. Completed water storage estimates, hydraulic modelling, and stagnation review for water storage options including below-grade reservoirs, standpipes, and water towers. She also prepared Environmental Screening Form and Project Approval Report for regulatory review and approval. In addition, she developed a 20-year growth lot concept maps including water and wastewater servicing. Coordinated preparation of a fieldwork request for proposal for topographic, geotechnical, and bathymetric survey work.

**Maintenance Management System, Scugog Island First Nation, ON**

Prepared a detailed assets list for all components of the water treatment plant, water tower, well supplies and pumphouse. Diana also assembled preventative maintenance instructions and intervals for use in the HIPPO maintenance management system.

**WTP Expansion and Upgrade Design and Construction, Georgina Island First Nation, ON**

**WTP Watermain and Water Tower Design and Construction, Scugog Island First Nation, ON**

**New WTP Design and Construction, Lac Seul First Nation, ON**

**Water Treatment Plant Upgrade Design and Construction, Nigigoonsiminikaaning First Nation, ON**

Completed shop drawing reviews, addressed contractor requests for information, prepared requests for quotations, reviewed contractor quotes and issued contract change orders. She also prepared detailed deficiency summaries based on site inspections of the water treatment plant, and low lift station. She developed detailed commissioning plans and led the start-up and commissioning activities for the new slow sand and granular activated carbon filters, ozone system, UV system, chlorine injection system, upgraded pumps and associated electrical and HVAC upgrades. Coordinated and led monthly construction meetings and fulfilled contract administration duties including preparation of payment certificates, site inspection and contractor scheduling coordination. Diana reviewed and approved Contractor Operation and Maintenance Manuals and Training Programs and drafted the Engineering Operation and Maintenance Manual. Coordinated a detailed conditions assessment of the existing fire hydrants and isolation valves and prepared a Minor Capital Application for additional funding.

## Brandon Smit, P. Eng

Process Engineer

### SUMMARY

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Brandon is a Process Engineer with a degree in Chemical Engineering with education and experience in process and environmental engineering with an emphasis on sustainability. Brandon's skillsets include statistical data analysis, infrastructure assessments, water and wastewater process modelling and system optimization while focussing on the complex interactions between technology and society. At S. Burnett & Associates Limited, Brandon works with the Water Resources and Energy/Environmental teams as a Process Engineer, working on municipal, First Nation, and private infrastructure projects.

### WATER AND WASTEWATER PROJECTS

#### **Intake and Water Treatment Plant Upgrades, Township of Emo, Emo, ON**

Coordinated with agency representatives to support permitting and approval requirements for proposed in-water works to replace a deficient river intake system. Reviewed existing WTP infrastructure to identify requirements for upgrade. Reviewed technology alternatives to support ion exchange addition to process.

#### **Kenora OPP Detachment Septic System Compliance Assessment, Ontario Clean Water Agency, Kenora, ON**

Technical support responsible for the completion of a septic system investigation to confirm whether the existing system would require upgrade or replacement. Completed field investigation and detailed calculations to determine the existing system was undersized and to establish the current daily wastewater demand at the facility to serve as the basis for the proposed design. Led reporting for Client and agency review and recommendations for permitting requirements.

#### **Capital Planning Study, Atikameksheng Anishnawbek, Sudbury, ON**

Reviewed residential and commercial growth alternatives with community representatives to support 20-year expansion and proposed population growth. Assessed condition of existing community assets and their ability to support future growth.



### EDUCATION

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#### **Chemical Engineering & Society (B.Eng & Scty)**

McMaster University

### PROFESSIONAL RECORD

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#### **Process Engineer**

S. Burnett & Associates Limited  
January 2022 – Present  
Orangeville, ON

#### **Engineer-In-Training / Project Coordinator**

S. Burnett & Associates Limited  
July 2018 – January 2022  
Orangeville, ON

#### **Utilities Intern**

Labatt Brewing Company  
May 2017 – August 2017  
London, ON

#### **Research Assistant**

Vineland Research & Innovation Centre  
May 2016 – August 2016  
Vineland, ON



**PROFESSIONAL  
MEMBERSHIPS**

Professional Engineer,  
Professional Engineers  
of Ontario

**Water and Wastewater Feasibility and Land Use Planning, Agency No. 1 Communities, Fort Frances, ON**

Technical support leading cost evaluation of water and wastewater servicing alternatives considering various development models. Completed detailed water, wastewater and stormwater calculations to support preferred land-use planning alternative to support phased development of commercial, residential, recreational development. Completed evaluation matrices to assess each alternative and completed subsequent reporting of concepts to meet the proposed land use plans for Agency No. 1 Lands.

**Capital Planning Study, Eagle Lake First Nation, Dryden, ON**

Technical support responsible for the completion of population projections and proposed water and wastewater servicing alternatives. Completed road needs review and assessment of existing water infrastructure. Reviewed water and wastewater demand calculations and supported community leadership in the identification of proposed development areas to support residential, commercial, cultural and recreation development proposed within the 20-year design window.

**Water System Feasibility Study, Wabigoon Lake Ojibway Nation, Dryden, ON**

Technical lead responsible for the completion of a comprehensive infrastructure assessment to evaluate issues with existing infrastructure and evaluate solutions to support the future needs of the community. Developed population, water demand and fire flow calculations to establish future infrastructure needs and proposed system upgrades. Evaluated proposed alternatives to accommodate the 20-year design window and completed hydraulic modelling to ensure proposed upgrades satisfied growth requirements and provincial standards. Supported the development of cost estimates for proposed alternatives. Led community through land use development alternatives to support residential development within the proposed Addition to Reserve land parcel.

**Water and Wastewater Feasibility Study, Georgina Island First Nation, Sutton West, ON**

Developed various residential and commercial development strategies to support 20-year growth of the community and established growth constraints. Technical lead responsible for the development of water and wastewater demand calculations to determine future infrastructure requirements. Completed hydraulic modelling, technology review, design assessment and evaluation of alternatives, cost evaluations, and land use planning to establish a solution to service the entire island with potable drinking water and wastewater servicing, while also ensuring that fire protection can be provided.

**Wastewater and Land Use Planning Feasibility Study, Sagamok Anishnawbek First Nation, Massey, ON**

Technical lead for completion of Class C cost estimates for various servicing concepts presented in the planning study. Developed and assessed the Community Needs Survey to ensure that proposed solutions incorporated community vision and feedback. Completed an assimilative capacity study for the proposed option to establish effluent discharge constraints and ensure that proposed treatment technologies would meet federal and provincial standards.

**Water Treatment Plant Upgrade Conditions Assessment, Ojibways of Onigaming First Nation, Nestor Falls, ON**

Technical lead for the process conditions assessment to identify requirements for proposed upgrade or expansion. Completed system performance testing and hydraulic calculations to assess system capacity and the ability for the plant to meet the community's long-term drinking water needs while also complying with provincial and federal drinking water standards.

## Career Highlights

Gerhard has been providing engineering services in Canada since 1988 as an electrical power, lighting instrumentation and controls engineer. Client sectors include municipal, land development servicing, power utilities, industrial, institutional and renewable energy. Gerhard is responsible for reviewing preliminary design brief preparation, pre-design panning, cost estimating, detailed engineering design, electrical power assessments, generator sizing, PLC-SCADA integration, specifications and tendering preparation, construction inspections, shop drawing reviews, start-up assistance and commissioning, and Project Management.

## Detailed Experience

### Municipal Water Projects

Responsible for electrical detailed design, tender, construction and commissioning assistance.

- Braestone Subdivision - Water Treatment Plant, Township of Oro-Medonte, ON (2008-2016)
- Cedar Heights and Larocque Booster Pumping Stations and Standpipe, North Bay, ON (2011-2013)
- Chippewas of Rama First Nation SCADA System, Rama, ON (2011-2012)
- Churchill Water Reservoir and Booster Pumping Station, Innisfil, ON (2017-2020)
- Church Well No. 2 MCC Upgrades, Town of Bradford West Gwillimbury, Bradford, ON (2014-2015)
- Dungannon Water Supply System, Township of ACW (2021-Present)
- Hamlet of Chesterfield Inlet - Water Treatment Plant Upgrades, Nunavut (2008-2011)
- Herridge Pumping Station & Reservoir, Electrical (Hydro) Assessment and Switchgear Upgrade, Region of Peel, ON (2007-2011)
- Huron Park Water Tower, Municipality of South Huron (2009-2010)
- Innisfil Heights Water Reservoir, Innisfil, ON (2012-2015)
- Innisfil Reservoir and Booster Station, Innisfil, ON (2012-2015)
- LeFroy Reservoir and Booster Station, Innisfil, ON (2009-2012)
- Lucknow Elevated Water Storage Tank, Municipality of Huron-Kinloss, Lucknow, ON (2016-2018)
- Markdale Water Tower Replacement, Markdale (2019-Present)
- Moose Deer Point First Nation, List of New Water Treatment System for entire Community (2006-2007)
- Muskrat Dam First Nations Water Treatability Study, Muskrat Dam, ON (2011-2012)
- North Spirit Lake First Nations Water Treatment Plant Assessment, North Spirit Lake, Nunavut (2009-2010)
- Orillia WFP Chlorine Room Upgrades, Orillia (2001-Present)
- Palmerston Well #4, Minto, ON (2011-2012)
- Payette Reservoir, Penetanguishene, ON (2013-2016)
- Ripley Elevated Water Storage Tank, Municipality of Huron-Kinloss, Ripley, ON (2016-2020)
- St. Marys Reservoir and Pumphouse, St. Marys, ON (2014-2018)

## Qualifications

- 1988 BTEch., Electrical Engineering, Ryerson Polytechnical Institute, Power Option, Toronto, ON

## Professional Designations, Licences, Registrations

- Professional Engineers of Ontario
- Association of Professional Engineers, Geologists and Geophysicists of the Northwest Territories (NAPEG)
- Association of Professional Engineers and Geoscientists of the Province of Manitoba (APEGM)
- IEEE: Institute of Electrical and Electronic Engineers

## Professional Experience

- 2021 to Present Tatham Engineering Limited  
 Manager Electrical & Mechanical Engineering
- 2008 to 2021 Runge Engineering Inc.  
 Collingwood, ON  
 President
- 2002 to 2007 R.J. Burnside & Associates Limited  
 Senior Electrical Engineer, Power-Controls-Instrumentation, Building Services
- 1997 to 2002 Pilkington Glass of Canada Ltd.,  
 Advanced Project Engineer
- 1991 to 1997 MacViro Consultants Inc.  
 Electrical Engineer, Power-Controls-Instrumentation
- 1988-1991 MacLaren Engineers Inc.  
 Engineering Designer

- Stewart Road Water Reservoir and Booster Pumping Station, Collingwood, ON (2020-Present)
- Tay Area Water Treatment Plant Upgrades, Township of Tay, ON (2012-2015)
- Tay Area Water Treatment Plant Phase 2 Upgrades, Township of Tay, ON (2019-Present)
- Zurich MCC Replacement, Zurich, ON (2015-2017)

### **Municipal Wastewater Projects**

Responsible for electrical preliminary design, detailed design, tender, construction, review and commissioning assistance.

- Alliston Wastewater Treatment Plant Expansion, Alliston, ON (2012-2016)
- Beaumont Sewage Pumping Station, District of Muskoka, Bracebridge, ON (2016-2018)
- Bonarrow Meadows Sewage Pumping Station, Rockwood, ON (2017-2019)
- Chippewas of Rama First Nation SCADA System, Rama, ON (2012)
- Church Street Sewage Pumping Station, Huntsville, ON (2012-2015)
- Collingwood WPCP Generator Replacement Project, Town of Collingwood, ON (2019-2020)
- Connaught Park Sewage Pumping Station Replacement, Municipality of Kincardine, ON (2017-2018)
- Cork Street & Durham Street Sewage Pumping Stations, Town of Durham, Township of Wellington North, ON (2009-2011)
- Dill Street Sewage Pumping Station, District of Muskoka, Bracebridge, ON (2016-2018)
- Dissette Street Sewage Pumping Station, Town of Bradford West Gwillimbury, Bradford, ON (2017-2019)
- Geraldton Sewage System Upgrades, Geraldton, ON (2009-2011)
- Innisfil Sewage Pumping Station #1 Upgrades, Innisfil, ON (2014-2017)
- Kapuskasing Wastewater Treatment Plant Upgrades, Kapuskasing, ON (2009-2011)
- Municipality of Lambton Shores Electrical Upgrades, Grand Bend, ON (2017-2019)
- Mt. Brydges Main and West Sewage Pumping Stations, Municipality of Strathroy-Caradoc, ON (2010-2011)
- Mt. Brydges Sewage Treatment Plant, Municipality of Strathroy-Caradoc, ON (2011)
- New England Village (SPS#1) Sewage Pumping Station, Town of Wasaga Beach, ON (2009-2013)
- Orangeville Waste Water Pollution Control Plant Major Expansion Project, Town of Orangeville, ON (2013-2020)
- Orangeville Waste Water Pollution Control Plant, Chlorination/Dechlorination Upgrade, Orangeville, ON (2009-2010)
- Orangeville Waste Water Pollution Control Plant Headworks Upgrade, Orangeville, ON (2009-2012)
- Orangeville Water Pollution Control Plant, Electrical Distribution System Review and Standby Power Assessment, Orangeville, ON (2008-2009)
- Ritchie Stong Sewage Pumping Station, Town of Bradford West Gwillimbury, ON (original in 2006-2007 and an expansion in 2008)
- Seaforth Sewage Treatment Plant Upgrade, Municipality of Huron East, ON (2012-2014)
- Town of Innisfil PLC and SCADA Upgrades, Innisfil, ON (2014-2016)
- Wiarton WWTP Generator Project, Wiarton, ON (2016-Present)

### **Building Condition Assessments**

Responsible for visual inspection of electrical systems' age, condition in building, review of available existing as-built drawings, review of any problem areas with maintenance staff; and preparation of summary condition report, complete with cost estimate for repair/upgrades.

- Cape Croker First Nations Elementary and High School Building Condition Assessments, Cape Croker, ON (2008)
- Orillia Power Office Building Assessment, Orillia, ON (2013)
- Wellington North Power Operations Centre, Mount Forest, ON (2011)

### **Parking Lot Lighting & Street Lighting**

Provided electrical engineering services for utility coordination, detailed design, tendering assistance, contract administration and construction inspections for the traffic signal projects.

- Bayview Drive and Big Bay Point Road Improvements, Barrie, ON (2017-Present)
- Church St. Street Lighting Upgrade, Schomberg, ON (2013-Present)
- Goderich Courthouse Square, Goderich, ON (2012-2013)

- Lake Simcoe Regional Airport, Barrie, ON (2010-2011)
- Prince William Way and Maplevue Drive East Traffic Signal and Street Light Design, Barrie, ON (2018-Present)
- Town of Whitchurch-Stouffville, Downtown Street Lighting Concept Design (2018-2020)

### Recreational Trailer Parks & Campgrounds

Parks and campground projects for various municipal and private developers, providing site assessment, load list evaluation and NCCI preparations, Utility coordination, electrical power design, lighting designs (with photometrics) high voltage primary metering, tendering and construction reviews:

- Bellwood Estates, Nepean (2016-2018)
- Cherry Beach Resort, Prince Edward County (2012)
- Georgian Bay Park, Tiny Township (2016)
- Goreski's Landing, Port Perry (2016)
- Leisure Lake Park, Ruthven (2017-2018)
- Spruce Glen Park, Coboconk (2017-2018)
- SunPark Beaver Ridge Estates, Gravenhurst (2012)

### Land Development

Land development projects for various residential and commercial lands, providing electrical power service, street and parking lighting designs with photometric layouts, utility coordination, tendering and construction reviews:

- Alcona Downs Development 3, Phases 1 & 2, Innisfil, ON (2015-Present)
- Alcona Downs Development 1, Phase 2, Innisfil, ON (2013-2016)
- Alcona Downs Development 2, Phase 3, Innisfil, ON (2013-2015)
- Alcona Downs Development 1, Phase 1, Innisfil, ON (2013-2015)
- Cundles Road Commercial Development, for PenEquity Realty Corp., Barrie, ON (2009-2016)
- Georgian Meadows Student Housing Development with five building, total of 94 units, Barrie, ON (2012-2013)

- Georgian Woodlands Estates, street lighting for 58-lots, Town of The Blue Mountains, ON (2012)
- Pratt Development, 246-lot subdivision with street lighting, Town of Innisfil, ON (2012)
- Ridgewood Court, Horseshoe Ridge Subdivision, Township of Oro-Medonte, ON (2013)
- Sleeping Lion Development, Innisfil, ON (2014-Present)
- Skyline Deerhurst Highlands Estates, street lighting and hydro coordination, Huntsville, ON (2012-2013)
- Tottenham Subdivision - street lighting design for 654-lot subdivision, Tottenham, ON (2008-2013)

### Industrial and Manufacturing

Preliminary design investigation, electrical design and equipment specifications, including "bulk" offloading, commercial dispensing, access control, level control, inventory management as well as site power supply and distribution, yard lighting, grounding and building systems, instrumentation, and fuel management control system.

- Bulk Fuel Storage Tank Facility, Mathias Colomb, MB (2012-Present)
- Bulk Fuel Storage Tank Facility, Red Sucker Lake, MB (2010-Present)
- Bulk Fuel Storage Tank Facility, Garden Hill, MB (2011-2014)
- Bulk Fuel Storage Tank Facility, Bloodvein, MB (2012-2013)
- Bulk Fuel Storage Tank Facility, Pauingassi, MB (2012-2013)
- Bulk Fuel Storage Tank Facility, Poplar River, MB (2012-2013)
- Bulk Fuel Storage Tank Facility, Manto Sipi, MB (2011-2013)

Other duties include engineering peer reviews; renewable energy (Cogeneration, Solar, Wind & Hydraulic Projects); work in the Utility Sectors; Marine Facilities; Commercial, Municipal, Institutional and Private Facilities; Traffic Signal projects.

## Career Highlights

Steven Tymczuk has been providing engineering design services in Canada since 1986. Steven's expertise in controls engineering, industrial engineering, maintenance supervision and project management has provided him with a solid foundation to handle various municipal, industrial, institutional and commercial projects. This background has enabled him to provide electrical design for controls/SCADA applications that are both comprehensive from an equipment efficiency and reliability point of view, as well as, fitting in with the customer's specific philosophy. Steven has considerable experience in pre-design planning, detailed engineering design, electrical specifications, control/process narratives, tender preparation, construction inspection, commissioning, Factory Acceptance Testing, and project management.

Steven also has experience in data communication systems, security access control, surveillance and associated data system networking. Engineering services include preparation of system riser diagrams, system component layouts, equipment room layouts, communication switch / server room layouts, wiring details, component selection and specifications, rack layouts and accessory component specifications. He is also familiar with standards for Grounding and Bonding Requirements for Telecommunications.

The Canadian Industrial Security Directorate (CISD) has granted Steve with the Designated Organization Screening allowing him to work on Government of Canada contracts up to and including Protected B level. Steven also has extensive experience in PLC programming for Allen Bradley and Modicon PLCs. He is familiar with programming for Allen Bradley HMIs as well as Wonderware and Allen Bradley Factory Talk SCADA applications. He is familiar with servo drives, variable frequency drives, reduced voltage starters and temperature control.

## Detailed Experience

### Municipal Design, Water and Wastewater

#### Shelburne Engineering Services, Shelburne (2020-Present)

Provide electrical engineering services as "Town Electrical Engineer" for various "green field" and "upgrade projects". Services include reviewing electrical drawing submissions for various land development projects, water / wastewater system designs, electrical design / specifications, control narrative for PLC / redundant SCADA system operations / alarming, integration into existing SCADA system, Factory Acceptance Test results review for PLC as well as cellular and fiber optic communication requirements, tendering assistance, shop drawing reviews, construction inspections, commissioning activities, recorded drawing updates and warranty inspections.

#### Lac Seul First Nation Kejick Bay Water Treatment Plant, Kejick Bay (2016-2020)

A "green field" design to provide electrical design / specifications, control narrative for PLC / redundant SCADA system operations / alarming, integration into SCADA system, Factory Acceptance Test results review for PLC as well as cellular and requirements for the facilities c/w with low lift/high lift pump control, chlorine mixer, building instrumentation system, hydronic heating system, chlorination equipment, controls/instrumentation, three phase incoming power and power distribution equipment.

## Qualifications

1986 Bachelor of Science  
 Electrical Engineering  
 General Motors Institute (GMI)

## Professional Experience

July 2021 to Present Tatham Engineering Limited  
 Senior Electrical Designer

2008 to July 2021 Runge Engineering Inc.  
 Collingwood, ON  
 Senior Engineering Designer

2004 to 2008 R.J. Burnside & Associates Limited  
 Senior Engineering Designer

1999 to 2004 Pilkington Glass of Canada  
 Advanced Engineering

1997 to 1999 Mobil Chemical Canada Limited  
 Maintenance Team Leader

1994 to 1997 Siemens Electric Limited  
 ISAFS  
 Controls Engineer

1990 to 1994 Michelin Tire (Canada) Limited  
 Electrical Project Leader

1986 to 1990 General Motors of Canada Ltd.  
 Electrical Engineer -  
 Maintenance, Maintenance Supervisor

Additional services include tendering assistance, shop drawing reviews, construction inspections, commissioning activities, recorded drawing updates and warranty inspections.

Other municipal projects are listed below.

- Pays Plat FN WTP Upgrades, Pays Plat FN (2021-Present)
- Rainy River FN WTP Upgrades, Rainy River FN (2021 - Present)
- Wabigoon FN HVP & Generator Upgrades, Wabigoon FN (2020-Present)
- Frenchman's Head Sewage & Collection System, Lac Seul FN (2020-Present)
- Lac LaCroix FN SPS Upgrades, Lac LaCroix FN (2020-Present)
- Mitaanjigamiing WTP Upgrades, Mitaanjigamiing FN (2019-Present)
- SCADA System Upgrades, Shelburne (2020-Present)
- Shelburne Well 3 Upgrades, Shelburne (2021-Present)
- SCADA Water System Upgrades, Mono (2019-2021)
- Mississaugas of Scugog Island First Nation Water Tower, Scugog (2016-2021)
- Mississaugas of Scugog Island First Nation Water Treatment Plant, Scugog (2016-2021)
- Chippewas of Georgina Island First Nation Water Treatment Plant, Georgina Island (2016-2020)
- Shelburne Waste Water Pollution Control Plant Tertiary Filter Replacement Upgrades, Shelburne (2016-2017)
- Orangeville Waste Water Pollution Control Plant Major Expansion Project, Orangeville (2013-2018)
- Alliston Waste Water Treatment Plant Expansion, Alliston (2012-2016)
- Kapuskasing Headworks Remedial Work, Kapuskasing (2013)
- Admiral's Gate Sump Pump Upgrades, Collingwood (2013)
- Rankin Inlet Sewage Treatment Plant Upgrades, Nunavut (2012- 2014)
- Muskrat Dam First Nations Water Treatability Study, Muskrat Dam (2011-2012)
- God's Lake Narrows Sewage Treatment Plant Upgrades, Manitoba (2012)
- Red Sucker Lake Nursing Station, New Water and Sewage Treatment Plant Upgrades, Manitoba (2012-2013)
- Orangeville SCADA System, Orangeville (2010-2015)

- Chippewas of Rama First Nation SCADA System, Rama (2011-2012)
- Victoria Harbour Water Treatment Plant & SCADA System Upgrades, Victoria Harbour (2010-2015)
- North Spirit Lake First Nations Water Treatment Plant Assessment, North Spirit Lake, Nunavut (2009-2011)
- Stroud Water Treatment Plant Upgrades, Innisfil (2009-2011)
- Orangeville Waste Water Pollution Control Plant Headworks Upgrade, Orangeville (2009-2012)
- Kapuskasing Wastewater Treatment Plant Upgrades, Kapuskasing (2009-2011)
- Geraldton Sewage System Upgrades, Geraldton (2009-2011)
- Hamlet of Chesterfield Inlet - Water Treatment Plant Upgrades, Nunavut (2008-2011)
- Braestone Subdivision Water Treatment Plant, Oro-Medonte (2008-2011)
- Rainy River Sewage Pumping Station, Sunset County (2008-2011)
- Orangeville Waste Water Pollution Control Plant, Chlorination/De-chlorination Upgrade, Orangeville (2009-2010)
- Kapuskasing Sewage Treatment Plant Assessment, Kapuskasing (2009)

### **Institutional**

- Kenora Homeless Shelter (2019-Present)
- Pharmacy Sterile Prep Room Renovations, Meno Ya Win Health Centre, Sioux Lookout (2017)
- Homeless Shelter, Sioux Lookout (2016-2019)
- Temagami FN Multi-Use Facility & Business Centre, Bear Island (2015-2017)
- Wahgoshig FN Multi-Use Facility & Business Centre, Matheson (2015-Present)
- Pic River FN School, Pic River (2015-Present)
- Moose Cree First Nation Assisted Living Apartment Complex, Moose Factory (2013-Present)
- Hudson Culinary Art Training School, Hudson (2013-2014)
- Sioux Lookout Meno Ya Win Health Care Facility Long Term Care Expansion Review, Sioux Lookout (2013)
- Long Lake First Nation High School Expansion. Long Lake (2012-2013)

- Education Centre Building - Lighting Control System Upgrade, Simcoe County District School Board, Midhurst (2012)
- Kingston General Hospital, Kingston (2012)
- Collingwood General and Marine Hospital, Collingwood (2010 - 2011)
- Sioux Lookout Meno Ya Win Health Care Facility, Sioux Lookout (2005 - 2011)
- Project Manager, Collingwood YMCA Renovations, Collingwood (2010)
- Headwaters Healthcare Centre, Orangeville (2010)
- Campbellford General Hospital, Campbellford (2009)

### **Industrial**

- Premier Concrete, Orangeville (2016)
- Union Energy Compressed Natural Gas (CNG) Station, Windsor (2016-2019)
- Union Energy Compressed Natural Gas (CNG) Station, Woodstock (2016-2019)
- Union Energy Compressed Natural Gas (CNG) Station, Kingston (2016-2019)
- Bulk Fuel Storage Tank Facility, Northlands First Nation, MB (2016-2018)
- Compressed Natural Gas (CNG) Station, 25 Old Eglinton, Toronto (2015-2016)
- Repair Garage Modifications, 25 Old Eglinton, Toronto (2015-2016)
- FCA Repair Garage Modifications, Windsor (2015-2016)
- Compressed Natural Gas (CNG) Station, 1050 Ellesmere, Toronto (2015-2016)
- New Gold Bulk Fuel Storage & Dispensing Facilities, Rainy River Site (2015 - 2016)

- Bulk Fuel Storage Tank Facility, Mathias Colomb, MB (2012 - 2015)
- Bulk Fuel Storage Tank Facility, Red Sucker Lake, MB (2010 - 2016)
- Atkinson Road Camp and Water Treatment Plant, Barwick (2014 - 2015)
- Bulk Fuel Storage Tank Facility, Garden Hill, MB (2011 - 2014)
- Bulk Fuel Storage Tank Facility, Bloodvein, MB (2012 - 2013)
- Bulk Fuel Storage Tank Facility, Pauingassi, MB (2012 - 2013)
- Bulk Fuel Storage Tank Facility, Poplar River, MB (2012 - 2013)
- Bulk Fuel Storage Tank Facility, Manto Sipi, MB (2011 - 2013)
- Electrical Building Services Design Engineer, Stamping Bay Expansion, F&P Factory, Tottenham (2012)

### **Municipal**

- Shelburne Engineering Services, Shelburne (2017- Present)
- SPD Upgrades, Town of the Blue Mountains (2018-2021)
- Reservoir - WWTP Generator Upgrades, Town of the Blue Mountains (2021-Present)
- Weather Measurement System, Town of the Blue Mountains (2021-Present)
- 34 Gordon EMS Upgrades, Guelph (2020-2021)
- BVCC Generator Upgrades, Town of the Blue Mountains (2019-2020)
- L.E. Shore Library Generator Upgrades, Town of the Blue Mountains (2019-2020)

