NOVEMBER 17, 2020

WATER AND WASTEWATER SERVICE DELIVERY REVIEW

TOWNSHIP OF SELWYN

SUBMITTED TO:
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November 17, 2020- Final Report

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EXECUTIVE SUMMARY

Service delivery review is an evaluation process in which a specific municipal service is systematically reviewed to determine the most appropriate way to provide it.

The service delivery review process focuses on setting priorities and, where possible, reducing the cost of delivery while maintaining or improving services and service levels. It's all about making informed, strategic choices that are affordable and reflect municipal values that draw on best practices in service delivery.

Many different management and operating models are available for municipal consideration and are discussed in this report. Some municipalities hire external contractors to operate their water system, whereas others own and operate their systems. Currently, most water and wastewater services in Ontario are provided through municipal departments, with oversight provided directly by municipal councils. While in the majority there are differences between them, primarily to what degree of outside support is required. It is only the large municipalities who can support all functions (engineering, trades, construction, management, and operations) internally.

After review of the various options, this report distills those considerations down to two (2) potential options for discussion and analysis. The first would be continued contract management and operations provided either by Peterborough Utilities Services (PUS), or another external agency, and secondly for Township staff to assume the management and operations internally with contracted support as required.

A review of two comparator municipalities, and industry best practise was used in proposing internal staffing requirements.

A detailed financial analysis was conducted by Watson and Associates using the 2020 Township approved water and wastewater budget to compare against the in-house model. This analysis can be found in Options-Financial Analysis section. The financial analysis concludes that potential savings can be realized with the in-house solution, as well as the benefits that are possible through direct control and accountability.

The report recommends the following for Council consideration:

- Engage with Peterborough Utilities Services (PUS) to discuss mutually beneficial contract language modifications that would provide Selwyn Township with more responsibility for system evaluation, improvement and innovation; and

- Seek competitive bids from PUS, Ontario Clean Water Agency (OCWA) and other private providers for the continued contract operation and management of the Selwyn Township systems; or
- Integrate the water and sewer operations and management into the Selwyn Townships Public Works department.

Regardless of the model, the *Safe Drinking Water Act, 2002* sets out the legal responsibilities and duties of persons who oversee municipal drinking water systems. These responsibilities and duties are commonly described as "standard of care" and apply to any person who exercises decision-making authority over a municipal drinking water system or who oversees the accredited operating authority of such a system.

The statutory standard of care continues to apply to municipalities that contract out this role to a third party.

DEFINITIONS

"Asset management" is the process of planning and controlling the acquisition, operation, maintenance, renewal, and disposal of organizational assets. This process improves the delivery potential of assets and minimizes the costs and risks involved.

"Asset lifecycle" is the series of stages involved in the management of an asset. It starts with the planning stages when the need for an asset is identified and continues all the way through its useful life and eventual disposal.

"Full cost recovery" for water and wastewater services is meant to ensure municipalities provide for long-term operating and capital plans for maintaining all aspects of the water and wastewater systems, including a financial plan for the replacement of these assets.

"Operating Authority" of a municipal drinking water system is the person or entity that is given responsibility by the owner for the day-to-day operations of the drinking water system, its management, maintenance, or alteration. A municipality may take on this operational role through its own staff or it may choose to contract it out to a third party (e.g. by hiring an accredited operating authority).

"Owner" of a municipal drinking water system is often the municipality as a corporate entity. Members of municipal councils and municipal officials of this corporate entity are obligated to provide oversight and exercise decision-making authority in respect of the drinking water systems the corporate entity owns. They are responsible for having policies, management tools and processes in place so that the municipality meets all its legislative and regulatory requirements under the *Safe Drinking Water Act, 2002*.

INTRODUCTION

Selwyn Township (Township) has received funding from the Provincial Municipal Modernization Program to support service delivery review(s). The project(s) will consider service delivery and modernization opportunities and review administrative processes in an attempt to identify opportunities to reduce costs.

Aureus Solutions, in partnership with Watson and Associates were retained to complete a service delivery review to identify and evaluate the options available to the Township for management and operation of the Water and Wastewater systems having regard for best practices identified within this sector.

The Project Team consisted of Doug Thompson (Aureus Solutions), Peter Simcisko (Watson and Associates) and Township staff, including the Chief Administrative Officer, the Manager of Financial Services, and the Water & Sewer Project Coordinator.

The Township of Selwyn (formerly Smith-Ennismore-Lakefield) was created by virtue of two amalgamations. The Township of Smith and the Township of Ennismore amalgamated on January 1st, 1998. The Township of Smith-Ennismore then amalgamated with the Village of Lakefield on January 1st, 2001. The Township officially changed its corporate name to Township of Selwyn in January 2013.

The Township of Selwyn is the largest Township in the County of Peterborough with a population of approximately 17,060 and is situated in the heart of the Kawartha's, bordered almost entirely by lakes, in central Ontario. The Township is largely a rural community with villages and hamlets including Lakefield, Bridgenorth, Ennismore and Young's Point.

While largely a rural Township with wells and septic systems, the Township has two municipal water and sewer systems.

The Village of Lakefield is serviced by stand-alone municipal water, sewage treatment and distribution/collection systems and provides service to approximately 3,100 users including 1,100 households, schools, commercial enterprises and small industry.

The second system is a distribution and collection system in the Woodland Acres area servicing approximately 350 households. This area is directly adjacent to the City of Peterborough and the Township owned distribution/collection systems are connected to the City water and sewer services.

In the past, the Township did operate Lakefield as a stand-alone water & sewer department and contracted with the Ontario Clean Water Agency (OCWA) for the Woodland Acres distribution and collection systems.

For approximately 20 years, following the passing of the *Safe Drinking Water Act, 2002*, and O. Reg 170/03 (Drinking Water Systems), the water and wastewater systems management and operation has been under contract with Peterborough Utilities Services Inc. (PUS).

STUDY APPROACH

- **Project Kick-off**

The Water and Sewer Service Delivery project was awarded to Aureus Solutions July 17th, and the project team comprised of Aureus and Township staff met August 6th, 2020

- **Site Visit- Current Status**

The Township Project Coordinator-Water and Sewer; Adam Tobin led a tour of the Township infrastructure which included the water treatment plant, lift stations and wastewater treatment lagoons.

- **Document Review**

Following the initial site visit, the Township provided Aureus with plans, reports, contract documents, and drawings related to the existing treatment systems. Financial information was requested by Watson and Associates to conduct the financial analysis of the options.

- **Benchmarking**

As a result of project timelines, a dedicated survey was not conducted of comparable municipalities for this report. Statistics from a number of current service delivery reviews were used as benchmarks. Population, treatment systems and complexity of distribution/ collection systems were the primary criteria.

- **Options Analysis**

1. Review and evaluate the following options for operation and management of the water and sewer services:

    a. Continuing to contract out all water & sewer service management and operations, including an option for more responsibility for system evaluation, improvement and innovation, and identify any potential contract partners;

        i. Contract out management and operational responsibilities with Township involvement in activities such as maintenance and service issues, site remediation following emergency repairs, system evaluation and innovation, capital maintenance projects, etc.

    b. Township to assume responsibility for the management and operations of the water and sewer services, through an expanded Public Works Department;

        i. Township to assume management and operations responsibility, with support resources (eg. weekend, vacation coverage) via contractor or other municipality/utility;

    c. Partner with other local municipalities who operate water and sewer systems to create a municipal services corporation that would be responsible for the management and operation of the water and sewer services on behalf the partners.

- **Report and Recommendations**

The report, including an options financial analysis was presented to the project team November 9th, 2020 followed by a Council presentation on November 16th, 2020. As required under the Municipal Modernization Funding program the final report will be submitted to the Ministry of Municipal Affairs and Housing by December 2020

SECTOR ISSUES AND TRENDS

- **Legislation & Regulation**

Under the Municipal Act, the Province has given municipalities the power to finance and provide water and sewage services.

In very general terms, municipalities may have sole responsibility, or the responsibility may be shared for the oversight, and delivery of these services.

The legislative and regulatory changes of the past 15 to 20 years have improved water and wastewater quality in Ontario and ultimately these utilities are recognized as global leaders in the management and delivery of these services. These changes however have significantly increased the role and responsibility of municipalities, who as owners oversee the management and operation of these services.

The majority of regulatory changes occurred in the drinking water sector following the completion of the Walkerton Inquiry and the implementation of the reports recommendations. With the passing of the *Water Opportunities Act, 2010* and the implementation of the Source Water Protection initiatives resulting from the *Clean Water Act, 2006* all recommendations from Chief Justice O'Connor's report have been addressed. While changes to water and wastewater legislation in Ontario are always possible, this concern has diminished, and no major regulatory changes are anticipated which would add additional burden on constituents and communities.

As a result of these changes governing water and wastewater systems Ontario municipalities have renewed their focus on investments, operations and outcomes of their water and wastewater systems. Municipalities must decide for themselves how best to structure the delivery of water and wastewater services within the provincial regulatory framework. There is no one-size-fits-all solution.

In regard to the organizational approach and models used for providing water and wastewater services, the following observations were made from a 2010 survey by the Association of Municipalities of Ontario (AMO), of municipalities:

1. Approximately one-third indicated they had consolidated their water and wastewater operations into one service group.
2. One-third identified that they had previously purchased the service from a private contractor and have now brought the service in-house or are enhancing their services provided by in-house staff by purchasing certain services, such as technical and advisory services, from other municipalities. These municipalities cited an increase in the level of service while experiencing an overall cost reduction in providing the service due to economies of scale and better control of the systems.

"From the discussions held with each municipality, it was apparent that the councils sought opportunities for maximizing the service while minimizing the cost."

The same survey also indicated that "local responsibility for water and wastewater systems has resulted in local problem solving, ingenuity and responsiveness to local conditions as municipalities have adapted to a changing regulatory environment. It has meant Councils have been able to pursue the necessary changes while balancing wider needs for efficiency and affordability".

With that said, there are examples of municipalities recently purchasing contracted management and operational services from third party providers.

- **Governance**

Governance is generally accepted to mean the "process of decision-making and the process by which decisions are implemented (or not implemented). Good governance results when decisions and outcomes of those decisions are "good" for society or what is considered "good" by society. Although "good" is a subjective term, there is some consensus about the criteria that can be used to measure good governance. Specifically, to be considered "good", governance should display a high degree of:

1. accountability;
2. responsiveness;
3. effectiveness and efficiency;
4. transparency;
5. participation; and,
6. respect for the rule of law (legislation).

For water and wastewater systems a Municipality measures "good" governance by ensuring they are meeting provincial operating requirements, are financially sustainable and are operated and maintained efficiently to maximize the life cycle of these significant municipal assets.

These requirements include:

1. Comply with Environmental Compliance Approval (ECA, previously a Certificate of Approval) requirements for performance and monitoring of water treatment and supply systems, wastewater treatment and collection/conveyance systems;
2. Ensure that a Financial Plan is completed under O. Reg. 453/07 every five years, or as required by the Drinking Water Licence issued by the MECP;
3. Comply with the Clean Water Act requirements to protect existing sources of drinking water and source water protection;
4. Implement best practices for management, operation and maintenance of all water and wastewater systems;
5. Comply with the applicable Surface Water Quality Management Act –Provincial Water Quality Objectives (PWQO) where these are applicable to a water or wastewater systems;
6. Comply with Ministry of the Environment, Conservation and Parks Design Guidelines for Sewage Works for operator licensing, system monitoring, reporting, spill prevention plans, public notifications and record keeping; and
7. Comply with Ministry of the Environment, Conservation and Parks Design Guidelines for Drinking Water Systems, including requirements for operator certification, system monitoring, reporting, public notifications and licensing.

- **Financial Sustainability**

On November 29, 2010, the Water Opportunities Act, 2010 received Royal Assent. The Act provides for municipalities to prepare sustainability plans for municipal water services, municipal wastewater services and municipal storm water services. The sustainability plans require the preparation of an Asset Management Plan along with a Financial Plan which will provide for full cost recovery of the systems.

A sustainable system is one where there are sufficient funds available to adequately cover the full range of current operating costs, maintain and repair the system's existing asset base, replace assets when appropriate, fund future growth and enhancements to services. The Township is continuing to work towards completion of their asset management plan.

To receive or renew a municipal drinking water licence for a drinking water system, the municipality needs to prepare a financial plan. Municipal councils have ultimate responsibility for approving any financial plans prepared for the ongoing management of their drinking water systems.

Financial plans for drinking water systems are required to forecast costs over a minimum period of six years as per *Ontario Regulation 453/07* under the *Safe Drinking Water Act, 2002*. In accordance with the asset management regulation, *Ontario Regulation 588/17*, municipalities are also required to identify life cycle activities that would need to be undertaken to maintain levels of service for drinking water systems and other assets they own.

Municipalities must conduct integrated financial planning that considers the water and wastewater systems as well as other municipal assets. Undertaking financial planning in this way can help municipalities prioritize investments across their asset portfolio and achieve efficiencies, for example, by aligning water main replacement and road construction, where possible, to save on costs.

- **Capital Planning & Asset Management**

Capital asset management planning is the process of identifying current and future capital needs and developing strategies and projects to address those needs.

The Capital Plan, is an integral part of an Asset Management Plan. It is a tool to assess the long-term capital requirements of water and wastewater utilities to establish funding of high-priority projects in a timely and cost-effective way. While a Capital Plan may be designed to forecast any period of time, it generally extends beyond the current operating cycle and usually covers a five to ten year time frame.

There are many different costs, both capital and operating, associated with planning, building, operating and maintaining water and wastewater systems. This includes costs that reflect outputs not attributable to the provision of these services such as fire protection services, or environmental protection through the management of waste by-products from water and wastewater operations.

- **Maintenance, Repair and Rehabilitation**

One of the key priorities of capital asset management is to safeguard the municipalities investment. Deferring maintenance can save money in the short term, but it creates a future liability which will continue to increase over time.

The optimal outcome involves doing the right thing, at the right time, consistently. In the case of managing existing infrastructure, doing the right thing, at the right time, involves knowing and actually doing the most cost-effective maintenance, repair, rehabilitation or replacement activity at the right time throughout the entire life cycle of the asset.

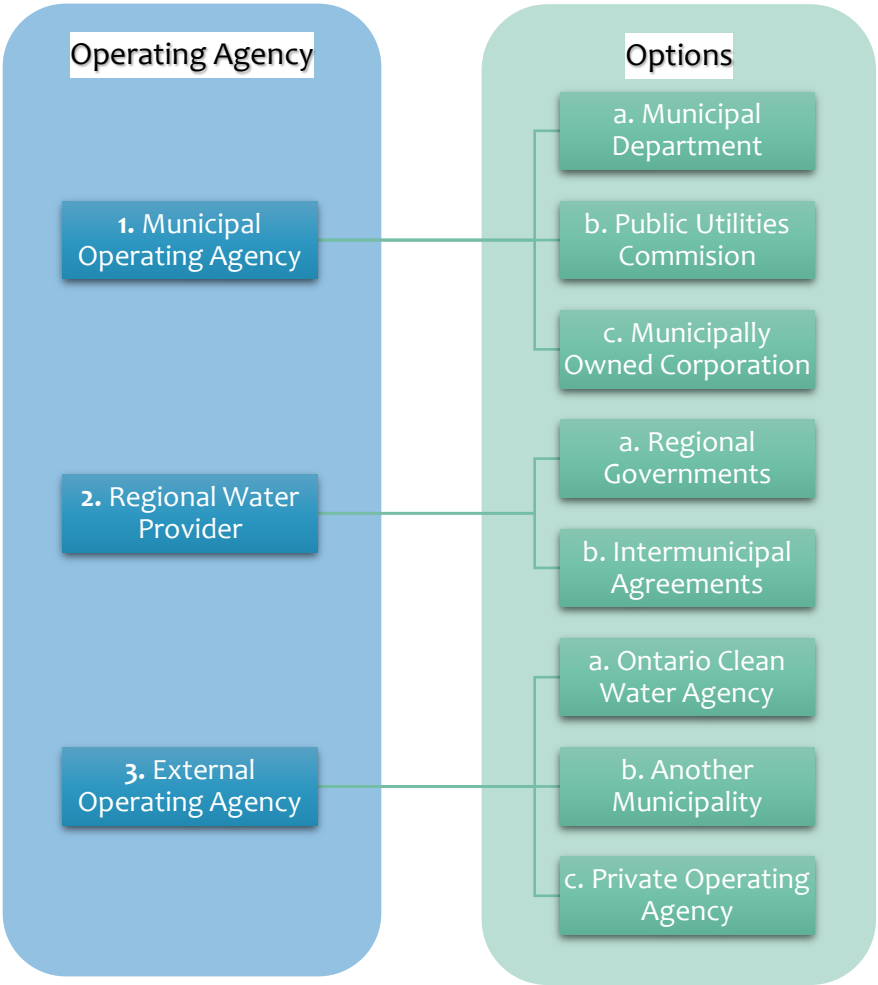
As part of the full life cycle approach, Municipalities should adequately plan and budget for maintenance needs to ensure that capital assets meets or exceeds its expected economic life. This planning is based on current condition assessment and appropriate methodologies to estimate maintenance needs for various assets.

SERVICING OPTIONS

Options to consider are whether to operate the water system through a municipally controlled operating agency, such as an internal department, or to engage an external operating agency, such as the Ontario Clean Water Agency (OCWA), another municipality, or a private company to run the system.

In Ontario there are approximately 450 municipal water and a similar number of wastewater systems serving the 444 municipalities. Today, most municipal systems are operated directly by the municipality. The Ontario Clean Water Agency (OCWA), a provincial Crown agency would be the largest contracted operating authority with a small percentage contracted to other private companies and an even smaller number to another municipality.

- **Summary of Options for Service Delivery**



1. Municipal Operating Agency

A municipality may decide to operate its own water system, either directly through the municipal administrative structure, or through an operating agency that the municipality owns and controls.

a. Municipal Department

Most water and wastewater systems in Ontario are operated by a department of the municipality. The strength of this model lies in the integration of decisions about the systems with other municipal functions, such as public health, land use planning, and economic development. A water and wastewater department may also be able to achieve greater economies of scale, by sharing administrative services with other municipal departments.

Since the municipality owns the water and wastewater systems, it is incumbent on the municipal council to ensure that its system is competently managed and operated.

b. Public Utilities Commission

Public utilities commissions (PUCs) were a major part of the water industry in Ontario for many years. They were governed by elected commissioners on behalf of the municipality. Since 1996, their role has declined dramatically as a direct result of provincial reforms and municipal decisions to disband local public utilities commissions.

c. Municipally Owned Corporation

Proponents of this model of a municipally owned corporation argue that it provides a means to ensure effective management of the water system. Under this model, the corporation (whether for-profit or non-profit) operates the water system on behalf of municipal council. Its directors are appointed by municipal council and normally consist of persons with relevant expertise. Peterborough Utility Services, and Lakefront Utility Services in Cobourg would be examples of this type of municipal operating agency.

Of these three (3) models, the option for Selwyn Townships Council consideration should be the water and wastewater services delivered as a municipal department, and this will be analyzed later in the report in more detail.

2. Regional Government Service Delivery

    a. Regions & Counties

A regional municipality (or region) is a type of government similar to and at the same municipal government level as a county, although the specific structure and servicing responsibilities may vary from place to place. Regional municipalities are formed in highly populated areas where it is considered more efficient to provide certain services, such as water, emergency services, and waste management over an area encompassing more than one local municipality.

In some cases where regional governments are established, the responsibility for water is shared between the regional government and the lower-tier governments. The regional government treats the water and sells it at a wholesale rate to the lower-tier governments, which in turn distribute it to consumers. The lower-tier governments also collect revenues from water rates.

Similar to regions, county government is a federation of the local municipalities within its boundaries. Counties are referred to as "upper tier" municipalities. Counties exist only in southern Ontario. Local municipalities (cities, towns, villages, townships) within counties provide the majority of municipal services to their residents. The services provided by county governments are usually limited to arterial roads, health and social services and county land use planning.

As you can see from the map below Western Ontario is the only area of the province where water and wastewater services are provided at the upper tier level, being the provincially designated regional governments.

In January 2019, the provincial government announced a review of the eight regional municipalities in the province (Durham, Halton, Muskoka, Niagara, Oxford, Peel, Waterloo, and York) and Simcoe County, as well as their constituent lower-tier municipalities saying that the regional government model had been in place for nearly a half century, and that there was a need to look at the potential for improvements to governance, decision-making and service delivery.

Throughout this review, the province heard that local communities should decide what is best in terms of governance, decision-making and service delivery. Following this consultation process the province decided to leave the existing regional model in place.

Regionalization is an option to improve the quality of the overall management and planning for a water and wastewater systems. It functions within a framework that allows for public accountability across the entire service region. As importantly, increasing the overall size of the system allows for a higher level of expertise within the management and operation of the system. This can also lead to greater financial

strength and the ability to allocate resources to where they are most needed, whether to address infrastructure challenges or to improve source water and treatment requirements.

However, these would be matters to engage with municipal partners at a provincial and/or county level, and as mentioned above the province is not considering any changes to the current regional government structure. As well, in my opinion Peterborough County doesn't lend itself to providing lower-tier support for the delivery of water and wastewater services. As such, this option will not be explored further in this report.

Later in this report, we will discuss opportunities for municipalities within the county, or watershed to share services which may achieve some of the regionalization benefits noted above.

Most Common Upper Tier Services (excluding EMS)

3. External Operating Agency

Where a municipality decides not to operate its water system directly or not in a regional arrangement, it has the option to contract with an external operating agency, including the Ontario Clean Water Agency, a private company, or another municipality.

a. The Ontario Clean Water Agency

The Ontario Clean Water Agency is a provincial Crown corporation established under the *Capital Investment Plan Act* of 1993. The Act sets out OCWA's objectives, including its mandate to provide operations and maintenance services to municipalities on a cost-recovery basis.

OCWA is the leading external provider of water and wastewater O & M services in Ontario with over 500 certified operations staff. In water and wastewater service they bring more than 20 years of safely and efficiently operating treatment and distribution/ collection systems across Ontario.

Locally, they operate a "hub" in the Kawartha's.

b. Another Municipality

A municipality to enters into an agreement with another municipality to operate its water and/or wastewater systems. For some small municipalities it may be an attractive option to exchange direct local control for the assurance of a more effective operation.

Managers of large water systems are often receptive to working out arrangements with smaller municipalities for the operation of the water systems in those communities. Such arrangements have the potential to benefit the larger municipality in terms of cost recovery, and the smaller municipality in terms of reduced overhead, greater technical skill set and reliability.

This is and has been the option for the delivery of Selwyn Township's water and wastewater services for the last 20 years.

c. Private Operating Agency

The private sector offers an option for municipalities seeking to contract with an external operating agency. There are only a small number of companies in Ontario that are capable of operating all or part of a municipal systems.

EXTERNAL OPERATING AGENCY-CONTRACT MANAGEMENT AND OPERATIONS

This coming year will mark the twentieth (20) year that Peterborough Utilities Services (PUS) has been under contract to provide management and operation services for the Lakefield water and wastewater systems. The current 5-year agreement is in place until January 1, 2022 and then shall be renewed for a successive five-year term unless notice of termination has been given. The contract can be terminated by either party, for any reason, upon twelve (12) months written notice.

By all accounts this long-term relationship has been beneficial for both parties.

Peterborough Utility Services provided the Township expertise when needed to navigate the changing regulatory climate of the past two (2) decades, provides economy of scale and significant "bench strength" because of their organizational structure, and for the Township the contract provided a fixed predictable cost for these services.

The use of third-party contractors can allow municipalities the ability to procure capabilities and services in a more cost-effective manner than they would be able to secure if they were to develop them internally. For example, it is typically cheaper to buy electrical services as and when needed rather than employing full-time electricians who would be permanently on the municipal payroll whether or not there was appropriate electrical work for them to undertake.

However, third party contractors, do not operate on a "revenue neutral" basis, and utility management and operation services are no different. Unfortunately, there is limited competition in water and wastewater sector for management and operational services and there are only a few companies in Ontario that have the capability of operating all or part of a municipal water system. This fact is a detriment to municipalities seeking cost effective solution and can hamper a municipality from determining if the "mark-up" is acceptable to the services provided. These fixed annual costs are significant to the Township and need to be analysed and compared to other alternatives to determine if they are getting good value for these services.

With the current term of the agreement expiring at the end of next year, within this term of Council, it is prudent to look at alternatives for providing the same or better level of service at a cost savings given the stabilized regulatory environment. The review may provide the Township some leverage in negotiating the new terms if the Township continues with the PUS relationship.

In cases where a municipality decides to employ an external operating agency, the means to ensure accountability necessarily shifts to the contractual relationship with that agency.

The current contract is the fourth "term" agreement in the 20-year relationship, and it appears that the contract language has not changed significantly over those iterations. In my opinion, the contract language and terms hinder Selwyn Township staff and Council from participation and providing the necessary assurances in the effectiveness and efficiencies being exercised on their behalf.

The largest gap identified is the level of reporting required. In regards to reporting, the contract requires: "Within sixty days of the end of each calendar year or such other period as the Township and the Service Provider may agree upon, the Service Provider shall provide the Township's Authorized Representative with a report describing the facilities performance for that period and copies of all reports as required by the Ministry of the Environment and Climate Change, Ministry of Municipal Affairs and Housing or any other applicable law."

The agreement should require the operating agency to report regularly and publicly on the achievement of water quality standards, on system performance through monthly scorecards and benchmarking, summaries of maintenance activities, continuous improvement initiatives and year-to-date financial results.

Also, for capital expenditures the contract states; "No later than September 30th of each year this Agreement is in force, or a date as the parties may agree in writing, the Service Provider will provide the Township with an estimate of the Capital Expenditures reasonably required for the operation of the Facilities for the following year. The list of recommended Capital Expenditures shall include the reason for the recommendation and potential implication for not performing the work."

This limits the Township from effective capital planning as well as "tying the hands" of staff and Council annually at the end of Q3 to budget for and implement the recommended expenditures. Long term planning and prioritization of capital spending should be addressed in any future agreements.

Other areas of weakness include the lack of incentive for innovation and continuous improvement initiatives, the "hydro adjustment" clause doesn't instill conservation. The contract definition of capital expenditures (over and above the annual fee) "to include any overhaul or rebuild of equipment, any non-routine repair; maintenance and excluding routine maintenance" could be construed as a disincentive to undertaking a strong proactive approach to maintenance activities.

The recent generator inspection reports from TSSA is an example of a lack of appropriate oversight and action. These three systems provide back-up power and serve as contingency to ensure uninterrupted level of service in the events of a power failure. Given the list of deficiencies, and the cost to bring them up to code, it is reasonable to believe that those issues could have been managed better with improved maintenance/ inspection schedules.

During contract renewal negotiation's the Township should strive to address the contractual gaps identified to increase transparency and participation which will help ensure effective and efficient management and operations. Transparency can be addressed by the improved reporting as noted above.

Participation is more difficult to achieve. Acting in the role of the "Accredited Operating Authority" PUS or any other service provider must act as an independent contractor. For this reason, a service provider is hesitant to allow Township staff to be involved the daily activities of maintenance and service issues, or general system evaluations. However, there may be opportunities for more Township involvement in identifying and prioritizing capital maintenance projects which could benefit both parties, and these should be explored.

- **The Ontario Clean Water Agency**

The Ontario Clean Water Agency is a provincial Crown corporation established under the *Capital Investment Plan Act* of 1993. The Act sets out OCWA's objectives, including its mandate to provide operations and maintenance services to municipalities on a cost-recovery basis. Although OCWA's mandate has changed significantly since it was created, its primary purpose remains the same: to operate water systems under contract with the municipal owner. OCWA offers an important alternative to other external operating agencies with an existing Kawartha hub.

- **Private Contractor**

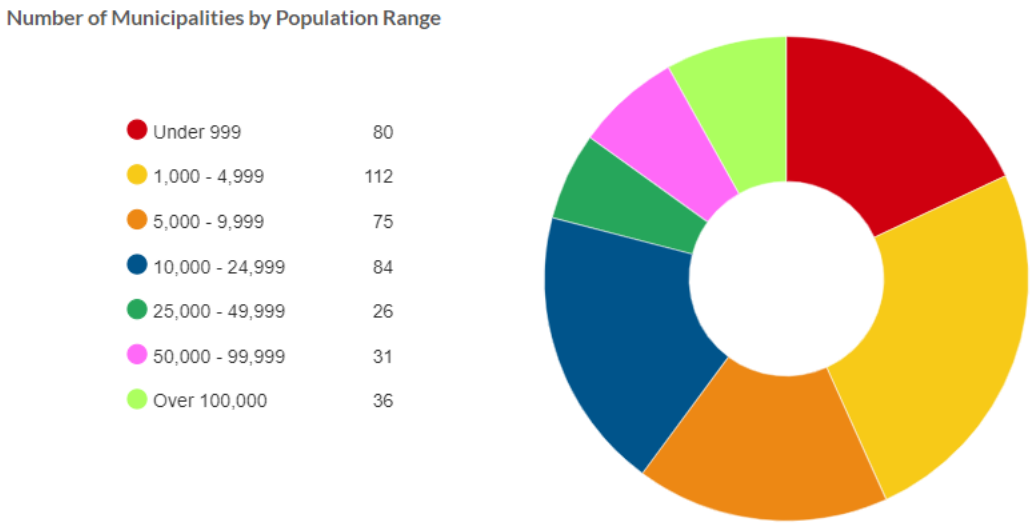
In Ontario, the private sector has difficulty competing with OCWA, and as such there are few options. Add to this that these providers currently do not have a footprint in the area, the costs may be prohibitive. Possible options to solicit quotations from would include Veolia Water, and Clearford Water Systems.

TOWNSHIP MANAGEMENT AND OPERATIONS

For the most part, delivery of water and sewage works and services in Ontario is carried out by public entities, with varying degrees of private sector assistance. While the literature might suggest a myriad of alternative service delivery options, the main types can be distinguished by how they allocate responsibility for functions between the public and private sectors. Specific applications of different service delivery models necessarily vary according to local municipality conditions and requirements.

It's clear that municipal autonomy is desired, and benefits can be gained by finding solutions to meeting capital and operational requirements at the local level.

Since water services are required to operate on a full cost recovery basis, water rates, and non-revenue services/ charges must support the utility management and operations as well as future capital investment. This is particularly true in municipalities similar in characteristics to Selwyn Township where only a portion of the total ratepayer base benefits from municipal water and wastewater services. This does pose a financial challenge for the 60% of municipalities whose population is less than 10,000.



- **Analysis for Selwyn Operations**

The Township of Selwyn owns the infrastructure for the municipal water and sewer services available in both Lakefield Ward and Woodland Acres subdivision.

Lakefield water treatment plant is a Class 2 facility and provides drinking water to 1,100 homes and businesses in Lakefield. The distribution system is Class 2. Through an agreement the Peterborough water treatment plant supplies drinking water to the 334 residents within the Woodland Acres Water System.

The Lakefield Wastewater Treatment Plant (Lagoon) is a Class 1 system and receives effluent from approximately 1,100 homes and business in the Village of Lakefield, the water is reclaimed and also returned to the watershed. The collection system is Class 1. Woodland Acres sanitary is treated at City of Peterborough wastewater treatment plant.

A conceptual servicing design for the Lakefield South Development Area an 850 home development is proposed to be serviced with water and wastewater services by the Village of Lakefield.

Prior to the legislative changes in the early 2000's the Township did operate Lakefield as a stand-alone water & sewer department and contracted with the Ontario Clean Water Agency (OCWA) for the Woodland Acres distribution and collection systems.

As noted earlier with the example of electrical services, Selwyn Township based on its capacity could never achieve full in-house management. This option is limited to the large municipalities in the province. Most municipalities in delivering any number of services depend on a hybrid of internal resources supplemented by contracted expertise. Even with the current contract service agreement, PUS may need to sub-contract due to many variables. Specialized services are contracted to external firms, including lateral repairs/replacement excavation, plumbing, electrical and SCADA programming matters, potable dive inspections and other.

Ultimately that will be the case should the Township look at internal management and operations of their water and wastewater systems. Therefore, it is important to remember that this comparison is looking at requirements to perform the regular duties currently provided under the PUS contract.

On review three (3) main categories are covered under this agreement.

1. Routine operation and maintenance of the Township assets which are comprised of the Lakefield water treatment plant and sewage lagoon, the Lakefield distribution and collection infrastructure, and the Woodland Acres distribution and collection network.
2. Management activities that include oversight, coordination, and administrative functions.

3. Handling regulatory matters and reporting.

A key driver for third party engagement is the need to acquire specialist skills and knowledge that can make a significant difference to the services. If we review the routine services provided under contract, these are not specialized, and a competent operator can fulfill these responsibilities. While it is difficult to quantify, Township staff exercising these duties should be more diligent, effective and accountable in the operation and maintenance of the systems.

The water treatment plant system is automated by SCADA (supervisory control and data acquisition) to provide consistent reliable operation of the plant. Although automatic control reduces manual operating function and operating costs, it is essential that the processes and equipment are visually inspected and monitored by operations staff.

Operation staffing levels are dictated by the requirement of legislation. The facility classifications are the determining factor in the level of certifications required by the operating group, while the DWQMS requires that a staffing contingency plan is in place to ensure qualified staff are available at all times. To ensure that these conditions are met, it is best practise that 3 operators with appropriate certification is considered the minimum.

For this report we analysed survey results of two (2) comparator municipalities who provide water and wastewater services using internal resources. These municipalities were selected based on the treatment facilities (types and classifications), infrastructure and populations served.

- **Town of Gananoque- Population 5,200**

The Utilities Division is responsible for improvement projects, water production, distribution, backflow protection, water quality monitoring, water conservation, customer service, meter installation and replacement, meter reading, wastewater collection system maintenance and repair, and environmental compliance. The water treatment Plant and Gananoque water distribution subsystem provide a potable water supply to residents and businesses of the Town of Gananoque. The treatment plant is a Class II direct filtration water treatment plant having a design rated capacity of 10,220 m3 per day. The Gananoque Distribution system consists of approximately 48Km of pipe and reservoir storage for 1327 m3 and is a Class II water distribution system. Both systems are owned by the Town of Gananoque and operated by the Town of Gananoque Public Utilities Operating Authority personnel.

- **Town of Perth- Population 5,930**

The municipality operates a water treatment plant capable of producing nine megalitres of drinking water daily. The facility is operated by staff on a seven day per week schedule responsible for protection of Perth's drinking water. The water distribution system consists of approximately 41 kilometers of water mains and one elevated water storage tank.

The municipality's sanitary sewer consists of approximately 42 kilometers of sanitary sewers with sewage being conveyed through a series of two sewage pumping stations. The sewage is treated at a sewage lagoon operated by the municipality.

1. **Operations Staff**

In reviewing staffing requirements for continuous operations, the current and historical operating staff levels provided by PUS were used as guidance as well as the comparator municipalities. The comparator municipalities and PUS utilize cross training between water and wastewater facilities to ensure they have required staffing levels. Water treatment staff carry certifications to work on other systems (i.e. water distribution, wastewater treatment, and/or wastewater collection). The number of certified operators for municipally operated plants ranged from 3 to 5. The current duties are outlined below.

a. Schedule of Operating and Maintenance Duties under Current PUS Contract

Wastewater Treatment Facility

- Inspect process control equipment to ensure proper operation of pumps, blower and aeration systems, alum and other chemical feeders;
- Check pumping stations and forcemains to ensure that everything is in order (also take routine readings);
- Operate pump controls and valve controls for pumping of all process streams; Clean as required UV disinfection equipment and settling tanks;
- Rake bar screens;
- Hose down weirs, walls and channels;
- Mix and monitor alum in feed tanks and other process chemicals;
- Inspect wastewater lagoon berms routinely for erosion and rodent control;
- Inspect wastewater lagoon routinely, to monitor level, odour, algae growth and to collect lagoon samples as required; and
- Sample discharge effluent as required.

Wastewater Collections

- Yearly, remove maintenance hole covers for key structures and inspect maintenance holes for flow through, debris accumulation, structural stability of walls, and rungs, infiltration and proper benching;
- Five-year rotation to inspect all manholes in the collection system
- Routinely monitor wastewater collection system for infiltration, illegal connections and illegal discharge of contaminants to system;
- Installation and/or inspections of new sewer services; and
- Provide locates for subsurface infrastructure components.

Water Treatment Plant

- Inspect process control equipment to ensure proper operation of chlorinators, flash mixing, coagulation, flocculation systems, clarifier, pumps, filters, chemical feeders;
- Check low lift pumping station to ensure that everything is in order (also taking routine readings);
- Operate pump controls and valve controls for pumping of all process streams;
- Hose down weirs, walls and channels in flocculation and sedimentation tanks and clarifier; Mixing polyelectrolyte and water in a liquid feed tank;
- Check filters and backwashing filters as required on a routine basis; Add sodium hypochlorite to feed tanks and check chlorine residual;
- Check highlift pumping to ensure that everything is in order (also taking routine readings).

Water Distribution

- Hydrants:
    - Open, exercise and flush key hydrants annually;
    - Make repairs where necessary and winterize all hydrants each fall; Water Tower
- Inspect exterior of water tank and standpipe as required through visual inspection, checking controls and valves, or by monitoring pressure and water levels.
- Distribution Piping

    - Inspect distribution system, visually for major leaks, sound for minor leaks, exercise main distribution shut-off valves and collect samples and monitor chlorine residual.
    - Repair water main leaks;
    - Provide locates for subsurface infrastructure components.

- Water Services
    - Install and/or inspect new water services; Inspect/maintain curbstops;
    - Repair service leaks;
    - Provide locates for subsurface infrastructure components.

Given the routine nature of the operations and maintenance duties the recommended operator staffing compliment would be 3 FTE operators jointly certified (WT and WWT). Ideally, these operators would hold Class 2 WT and Class 1 WWT certifications.

Note: It is recommended that Water main/ services leak repair, wastewater collection blockage/ repair, and water and sewer new installations be contracted out either to PUS, or another contractor. On average over the term of this contract in the water distribution system there has been 1-2 broken watermains/service leaks each year; and in the sanitary collection system 2-4 sewer lateral blockages.

The proposed wage range (depending on certification levels) is a comparable market value, and in-line with other Selwyn Township salaries. Competition with other municipalities is a reality in today's marketplace, but given the proposed salary & benefits, certification levels required, and quality of life retaining qualified operational staff should not be an issue.

The systems would be staffed daily Monday to Friday, with an on-call/ standby rotation comprised of the 3 operators, and the QMS/ Compliance Coordinator on a proposed four (4) week rotation.

Weekend oversight and sampling, (if required) could be managed cost effectively with the internal resources. Options for these functions (weekend, on-call) to be contracted out, or shared with another municipality tend not be advisable since every system is unique and therefore the same knowledgeable response is difficult to achieve without intimate knowledge of the system.

2. Management

As noted above, the system owner is obliged under the *Safe Drinking Water Act 2002* and *Ontario Regulation 128/04* (Certification of Drinking Water System Operators and Water Quality Analysts) to provide competent certified staff to operate its water treatment system.

These regulations furthermore require the municipality to assign an Overall Responsible Operator (ORO) to be available for system oversight. The ORO must be a knowledgeable and experienced person to direct other operators on the operations of the system and to respond immediately and effectively to emergencies. The ORO must furthermore carry a certification that is equal to or above the class of the system being served. The Township would be required to have an ORO with a Class 2 certification.

When considering bringing water and wastewater services in-house, the ORO/Supervisor position is an integral role, and can be the most difficult to recruit. While competency is paramount, equally important is leadership skills to foster an effective team.

It would be recommended that the water and sewer services would be included as a division of the Public Works Department with the Supervisor reporting to and supported by the Manager of Public Works. Again, this aligns with the current organizational structure.

The Township currently employs a Water and Sewer Project Coordinator to support special water and wastewater capital projects, as well as assisting with the administration of the PUS contract. It would be anticipated that this position could transition into the Water and Wastewater Supervisor role with compensation comparable to that of his peer; being the Public Works Supervisor.

3. Regulatory

As discussed earlier, legislative and regulatory change of the last ten (10) years have significantly increased administration and reporting associated with the new requirements. Examples include:

a. DWQMS

All municipal drinking water systems that provide water to residences in a community must have a licence from the Ministry of the Environment, Conservation and Parks (MECP). The ministry's Municipal Drinking Water Licensing Program requires owners and operating authorities of drinking water systems to incorporate the concepts of quality management into system operation and management.

For a drinking water system to receive or renew its licence, the owner and operating authority must have in place:

- Drinking water works permit
- Accepted operational plan
- Accredited operating authority
- Financial plan
- Permit to take water.

Licences are valid for a five-year period and must be renewed.

Accreditation is intended to focus on the processes and systems that an operating agency puts in place at the corporate level to ensure that the entire organization is functioning effectively. To be accredited, operating authorities would be required to adopt a quality management system and would be subject to independent audits by a certified accrediting body.

b. The Operational Plan

As part of its corporate quality management system, an operating authority needs to undertake operational planning at all of the individual water systems for which it is responsible. The safety benefits of the quality management approach make it desirable to formalize operational planning at the plant or system-specific level. All municipalities are required to have an operational plan for their water system or, depending on the size and complexity, for each component of the system (e.g., the treatment plant, distribution system, and monitoring system). The operational plan is a mechanism for management and staff to carefully outline, and periodically revisit, the barriers and strategies they have put in place to ensure safety. The existence of an accessible operational plan will also facilitate reviews of a water system by outside personnel, including MECP inspectors and consulting engineers.

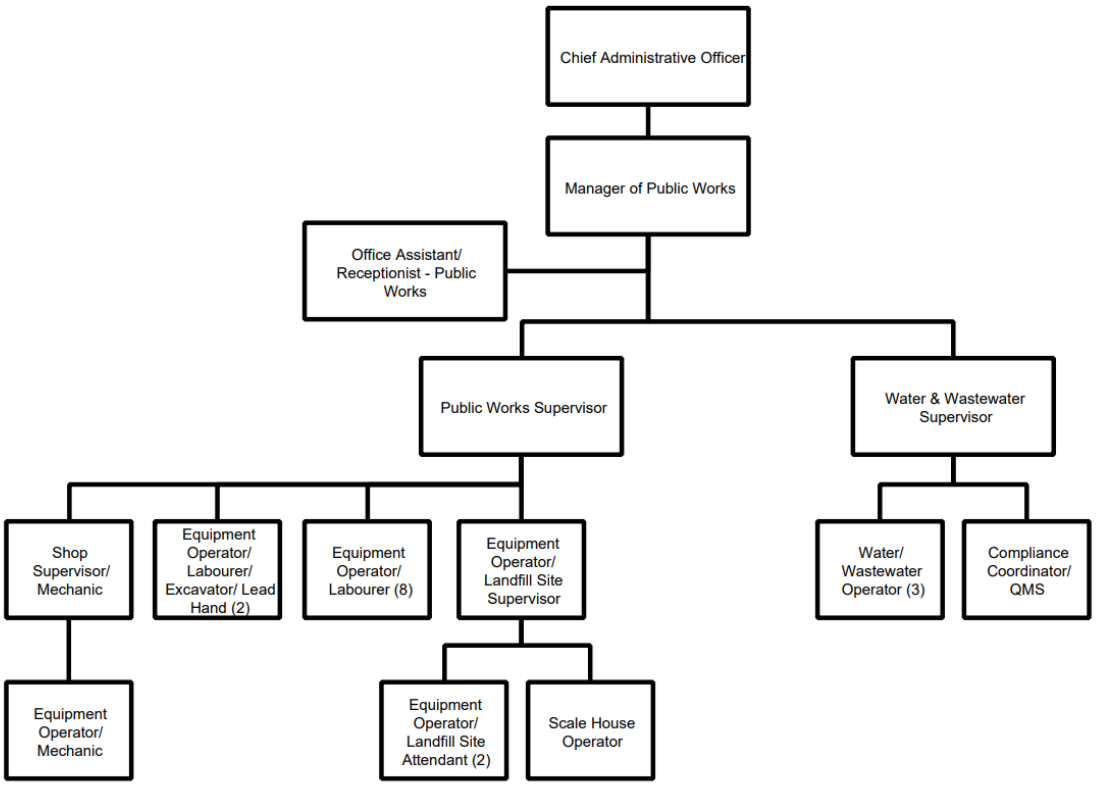
As such, most municipalities now employ a Compliance Coordinator/ QMS position in the departmental organizational structure.

It would be recommended that a Compliance Coordinator/ QMS position (1FTE) would be required. It is envisioned that this position would also have water treatment certification so that he/she could be utilized in the field and included in the on-call/ standby rotation. The proposed wage rate would be comparable to the operator compensation.

Should Council consider bringing the services under a municipal department, a Township DWQMS would have to be developed as would distinct operational plans for the Lakefield and

Woodland Acres systems. These submissions, application fees and a successful third-party audit would be required for Selwyn Township to be considered an "Accredited Operating Authority".

Proposed Organizational Revisions



Transitionary Costs

It needs be recognized that should Township Council decide to proceed with the in-house service delivery for water and wastewater that there will be cost associated with migrating from the current PUS contract. As mentioned earlier the termination agreement provides for a minimum twelve (12) month notice, so Township staff will have time to plan for a smooth transition process.

From a staffing perspective, it is proposed to bring the Compliance/ QMS Coordinator on board 4 months prior to assist the Water and Wastewater Supervisor in completing and submitting the Operational Plans and DWQMS, working with the auditor to ensure that the

Township receives the necessary Accreditation prior to the transition. Also, the recruitment and on-boarding of the operations group approximately two (2) months prior to familiarize themselves with the systems and job responsibilities.

Logistically, shop/ office facilities will need to be organized, as well as fleet vehicles. (2 pick-up trucks)

The transition costs have been compiled, and based on the financial analysis, the return on this initial investment is three (3) years based on the projected operational and management savings.

PARTNERSHIPS, SHARED SERVICE AGREEMENTS

Partnerships can be organized formally or informally. Partnerships would usually be informal agreements while shared service agreements tend to be formalized outlining in detail and through municipal bylaws how they will function. The goals for small municipalities when contemplating entering into either arrangement could be:

- Addressing the pressures of new regulatory compliance requirements and lower levels of external funding
- Maintaining service levels sustainably and affordably
- Decreasing costs while maintaining service levels
- Providing new services and enhancing responsiveness to new citizen demands
- Building municipal capacity

Benefits of shared services include cost efficiency and economies of scale, access to specialized skills and resources, improvement to service, and increased municipal capacity.

Obvious partners for these arrangements are the Townships eight (8) neighboring municipalities who make-up Peterborough County.

Regardless of the direction for future management and operations, many of these possible partnerships can be pursued. Areas of mutual need include:

- Chemical Purchasing
- Water Billing
- Emergency water main repairs and sewer blockages.
- New installs (water and sewer)
- Preferred trades contract (electrical, mechanical, instrumentation)- potentially Master Service Agreements with vendor
- Engineering Services
- Meter installation, repair and reading (currently required on a limited basis)

Examples of current partnerships and shared service agreements would include:

The Township of Selwyn supports a joint partnership with other municipalities for the Otonabee Region Conservation Authority (ORCA) to oversee these source protection responsibilities on their behalf; and

The inter-municipal agreement between the Selwyn Township and City of Peterborough to supply water and sewer services to the residents of Woodland Acres is an example of a shared service agreement.

OPTIONS-FINANCIAL ANALYSIS

Watson & Associates Economists Ltd. (Watson) have been retained by Aureus Solutions Inc. (Aureus) to assist with a Service Delivery Review that Aureus is undertaking for the Township of Selwyn (Township).

The Township provides water and wastewater services in the Lakefield ward and in the Woodland Acres subdivision. The Township owns all of the infrastructure; however, operations and maintenance are currently contracted out to Peterborough Utilities Services Inc (P.U.S.).

The objective of the Service Delivery review is to identify and evaluate alternative service options with respect to operations and maintenance of the Township's water and wastewater systems. The financial analysis summarized in this memorandum has been prepared to measure the financial implications of the alternative service option and resultant rate payer impacts.

Inputs & Analysis

The operating budget figures for water and wastewater services presented in this analysis are based on the Township's 2020 budgets.

The expenditures for each component of the operating budget were reviewed to determine where adjustments would be made under the alternative service option. A summary of the adjustments is provided below:

- Removal of P.U.S. operating agreement costs
- Removal of allocated salary and benefit costs which would be captured within a centralized staffing component under the alternative scenario.
- Removal of hydro adjustment allocations form various areas of the 2020 budget because hydro costs are addressed separately under the alternative scenario.

Costs related to the Township's management and operation of the water and wastewater systems were estimated based on inputs provided by Aureus and are summarized under the "Township Management & Operation" heading in Figure 1 below. Areas where adjustments were made to the information provided by Aureus are noted below:

- Salaries were estimated based on hourly rates provided by Aureus multiplied by 2,000 hours per full time equivalent position.
- Benefits were estimated to be 30% of salary costs.
- Electricity costs were estimated based on the electricity costs identified in the contract with P.U.S., adjusted for the hydro adjustment that the Township budgeted for 2020, and further reduced by 5% reflective of energy-saving measures that the Township is expected to implement.

Capital expenditures have been excluded from this analysis because they are funded from the Township's specific reserves and therefore do not have a direct impact on user fees. However, capital-related costs such as transfers to reserves and repayment of unfinanced capital have been included in the Capital-Related section of Figure 1. The transfer to capital reserves under the alternative scenario has been increased by $17,100. This is reflective of the average annual lifecycle costs associated with two additional pick-up trucks that would need to be acquired by the Township to carry out operations.

Finally, various operating revenues have been identified in the 'Revenues' section of Figure 1. These operating revenues include various miscellaneous receipts, investment income, penalty charges, transfers from working funds reserves, and capital charges collected from customers in the Woodland Acres subdivision. These operating revenues are subtracted from total expenditures to calculate total billing recovery – the amount that the Township needs to raise through user fees.

Figure 1: Operating Budget Impacts

Description	2020 Budget	Alternative	Notes
Expenditures			
Operating Costs			
Lakefield Water			
General Water Overhead	$ 553,415	$ 67,033	Removal of PUS operating contract costs and salary allocation
Testing	$ 8,000	$ 8,000	
Water Treatment Plant	$ 6,500	$ 30,500	Removal of hydro adjustment
Booster Station	$ 1,100	$ 1,500	Removal of hydro adjustment
Standpipe & Water Tower	$ 2,750	$ 5,000	Removal of hydro adjustment
Water Mains/Connections/Valves	$ 12,500	$ 12,500	
Water Breaks/Thaw	$ 40,000	$ 40,000	
Water Meters	$ 4,500	$ 4,500	
Water Hydrants	$ 5,000	$ 5,000	
Transfer from Finance	$ 21,698	$ 21,698	
Lakefield Sewer			
General Sewer Administration	$ 543,275	$ 67,681	Removal of PUS operating contract costs and salary allocation
Testing	$ 7,500	$ 7,500	
Sewage Treatment Plant	$ 2,000	$ 7,500	Removal of hydro adjustment
Pumping Stations	$ 4,000	$ 5,000	Removal of hydro adjustment
Lagoon	$ 14,500	$ 22,500	Removal of salaries and hydro adjustment
Sewer Mains & Connections	$ 24,500	$ 22,000	Removal of salaries
Transfer from Finance	$ 21,698	$ 21,698	
Woodland Acres			
General Administration	$ 252,545	$ 207,639	Removal of PUS operating contract costs
Township Management & Operation			
Regular and PT Salaries and Benefits	$ -	$ 505,300	
Overtime	$ -	$ 10,000	
Shift Premium/On-call	$ -	$ 10,000	
Training	$ -	$ 10,000	
Communications	$ -	$ 2,000	
Insurance		$ 2,100	Vehicle insurance on 2 additional pick-up trucks
Electricity	$ -	$ 138,774	Assumes 5% savings relative to what is provided in PUS contract.
Chemicals	$ -	$ 70,773	Assumes 10% savings relative to what is provided in PUS contract.
Equipment	$ -	$ 27,051	
Materials and Contracted Services	$ -	$ 136,839	Assumes 10% savings relative to what is provided in PUS contract.
Fleet	$ -	$ 5,000	Fuel and servicing through Public Works
Sub Total Operating	**$ 1,525,482**	**$ 1,475,086**	
Capital-Related			
Repayment of Unfinanced Capital (Principal) - Woodland Acres	$ 132,225	$ 132,225	
Repayment of Unfinanced Capital (Interest) - Woodland Acres	$ 15,923	$ 15,923	
Transfer to Capital Reserves	$ 1,233,361	$ 1,250,461	Increased to account for annual lifecycle funding for additional pickup trucks
Sub Total Capital Related	**$ 1,381,509**	**$ 1,381,509**	
Total Expenditures	**$ 2,906,991**	**$ 2,856,595**	
Revenues			
Miscellaneous Receipts	$ 253,560	$ 253,560	
Investment Income	$ 69,729	$ 69,729	
Penalty Charges	$ 3,565	$ 3,565	
Local Imprvt./Special Charges	$ 689	$ 689	
Woodland Acres Capital Charges	$ 148,148	$ 148,148	
Net Transfer from Working Funds Reserves	$ 38,786	$ 38,786	
Total Operating Revenue	**$ 514,477**	**$ 514,477**	
Total Billing Recovery	**$ 2,392,514**	**$ 2,342,118**	
Change in Annual Billing Recovery Requirement ($)		-$ 50,396	
Change in Annual Billing Recovery Requirement (%)		-2.1%	

As can be seen at the bottom of Figure 1, the total billing recovery required under the alternative scenario is $50,396 less than the billing recovery required to support the 2020 budgeted expenditures. This represents a reduction of 2.1%.

Conclusion

Based on the inputs and analysis summarized above, the alternative service delivery model would provide a net benefit to the Township's ratepayers.

The transition to the alternative service delivery model is estimated to last 12 months. During this transition period, the Township would continue to operate under the existing operating contract with P.U.S. but would begin preparing to assume operations. A few activities and costs have been identified for the 12-month transition period and they are summarized in Figure 2 below.

Figure 2: Transition Costs

Description	Cost Estimate
3 Operations staff (project 2 months)	$ 34,000
Compliance/ QMS Coordinator (project 4 months)	$ 22,000
Accreditation - permitting/auditing fees	$ 5,000
Shop/Facilities Set-up	$ 20,000
Fleet - purchase of 2 vehicles – Pick-up trucks	$ 120,000
Total	**$ 201,000**

The additional costs that would be incurred by the Township during the 12-month transition period, as summarized in Figure 2 above, can be viewed as an initial investment. Based on the anticipated annual savings following the transition period, the Township could expect to see a return on this investment within four years from the transition.

It should be noted that the analysis presented herein assumes that billing services would continue to be contracted out to P.U.S. There could some benefit to bringing billing services in-house. For example, this would give the Township more direct access to customer data which would allow for a more thorough examination of rate structure alternatives and costs/benefits of introducing

CONCLUSION

Costs and improved level of service are the determining factors in decision-making on service delivery options. As indicated through the financial analysis, the annual cost of internal management and operations should result in overall savings.

Increased level of service due to more effective and efficient operations are difficult to quantify as a result of these services being provided by PUS for a twenty (20) year period. I would be confident in stating that hydro cost savings can be realized through conservation efforts, chemical costs can be reduced through process optimization and capital costs can be better managed thus extending asset life cycles.

Should the Township choose to continue under a contracted service model, it would be recommended that the Township seek competitive quotes from multiple external agencies. Further, should the relationship with PUS continue, the Township should work towards mutually beneficial contract language modifications that would provide Selwyn Township with more responsibility for system evaluation, improvement and innovation.