JANUARY 28, 2023

# WATER AND WASTEWATER SERVICE DELIVERY REVIEW

**VILLAGE OF MERRICKVILLE-WOLFORD**

SUBMITTED TO:
MS. KIRSTEN RAHM
TREASURER
VILLAGE OF MERRICKVILLE-WOLFORD
317 BROCK STREET WEST, P.O. BOX 340
MERRICKVILLE, ONTARIO, K0G 1N0

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## LIMITATIONS OF THE REVIEW

This review does not constitute an audit or assessment from a legal, or engineering compliance perspective. As such, Aureus Solutions Inc. does not make any legal, or engineering recommendations.

## EXECUTIVE SUMMARY

Service delivery reviews are 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.

For water and wastewater services there many different management and operating models available for municipal consideration which are discussed in this report. Some municipalities hire external contractors to operate their water and wastewater systems, 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 the municipal department model makes up the majority, there are differences between them, primarily to what degree outside support is required. It is only the large municipalities who can support all functions (engineering, trades, construction, management, and operations) internally.

A detailed financial analysis was conducted by Watson and Associates using the Village's 2022 operating and capital budgets, and 2022 Asset Management Plan Study. This full analysis can be found in Appendix A- Watson Service Delivery Review.

The financial analysis concludes:

- Village's current operations showed that the Village's 2022 water and wastewater rates are reflective of full-cost pricing principles and, as such, the Village's water and wastewater services would be considered financially sustainable.
- The alternative service option (i.e., the Village assuming the management and operation of the water and wastewater systems) would not provide financial benefits relative to the status quo.

As a result of our review, the report recommends the following for Council consideration. Both options employ external partners.

- Continued contract management and operations provided either by the current provider; the Ontario Clean Water Agency (OCWA), or another external agency.
    - Prior to the current contract notification deadline, seek competitive bids through an RFP process from OCWA, and other private providers for the continued contract operation and management of the Village's systems; and

- A neighboring Municipality (Smith Falls, or North Grenville) via a services contract provide the operation, maintenance, and managerial support for the Village. This option would require political will, and a willing partner.
    - Engage with neighboring municipalities to explore a shared services arrangement to provide the necessary staffing support for operation and management of the Village facilities.

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**.

## INTRODUCTION

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 Village for management and operation of the water and wastewater systems having regard for best practices identified within this sector, level of service, and cost.

The Project Team consisted of Doug Thompson (Aureus Solutions), Peter Simcisko (Watson and Associates) and Village staff, including the Chief Administrative Officer, the Treasurer, and the Operations Manager.

Merrickville-Wolford is a village-status municipality in Eastern Ontario located in the United Counties of Leeds and Grenville. It spans both shores of the Rideau River.

The current municipality was incorporated on January 1, 1998, by amalgamating the former village of Merrickville with the former township of Wolford.

The Rideau locks at Merrickville with three locks have a total lift of 25 ft (7.6 m). On the south side of the locks there is the old blockhouse, which has been restored by Parks Canada as a tourist site and museum operated by the Merrickville and District Historical Society.

In the last two decades, the region has seen a boom in the local economy mostly related to increased tourism. It is famous for its local crafts people and artists.

In the 2021 Census of Population conducted by Statistics Canada, Merrickville-Wolford had a population of 3,135 living in 1,392 private dwellings, a change of 2.2% from its 2016 population of 3,067. With a land area of 214.33.27 $km^2$ (82.75 sq mi), it had a population density of 14.6/$km^2$ (38/sq mi) in 2021.

**Canada census-Merrickville-Wolford, Ontario community profile**

| | | | |
|---|---|---|---|
| | 2021 | 2016 | 2011 |
| **Population** | 3,135 | 3,067 | 2,850 |
| **Land Area** | 214.33 $km^2$ | 214.55 $km^2$ | 214.49 $km^2$ |
| **Population Density** | 14.6 $km^2$ | 14.3 $km^2$ | 13.3 $km^2$ |
| **Median age** | 54.4 | 51.6 | n/a |
| **Total private dwellings** | 1,392 | 1,344 | 1,248 |
| | | | |

The Village is currently using an external service delivery model. No one delivery model is inherently better than another, so the selection of one delivery model over another must be carefully evaluated. One important factor is the average cost of water per customer, but this must be balanced with other important factors such as compliance, risk, responsiveness, and long-term resilience.

For many years, the water and wastewater systems management and operation has been under contract with the Ontario Clean Water Agency.

## STUDY APPROACH


- **Project Kick-off**

The Water and Wastewater Service Delivery project was awarded to Aureus Solutions July 27th, 2021, and the Aureus project manager and Village staff met August 22nd to 24th, 2022.

- **Site Visit- Current Status**

Senior management, and the local operators from OCWA led a tour of the Village infrastructure which included the water treatment plant, pumping stations and wastewater treatment plant.

- **Document Review**

Following the initial site visit, the Village provided Aureus with plans, reports, contract documents, and drawings related to the existing treatment systems. Financial information, as needed 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 several current service delivery reviews were used as benchmarks. Population, treatment systems and complexity of distribution/ collection systems were the primary criteria.

- **The Objectives of the Service Delivery Review**

a. Identify current and future regulatory, operational, infrastructure, financial, and societal trends and influences that will impact the Village.
b. Review the current state of the Village's water and wastewater systems, service delivery including the management, operation, and maintenance practices used.
c. Identify water and wastewater service delivery models available to the Village.
d. Evaluate the possible service delivery models according to their ability to:
    i. Meet priority municipal service delivery criteria
    ii. Ensure Best Industry Practices are utilized.
    iii. Future-proof the Village water and wastewater services in the context of the trends and influences.
e. Recommend whether service delivery should continue under the existing model or whether the Village's water and wastewater services would be better delivered through another model.

- **Options Analysis**

The option analysis considered which type of organization and delivery model would be best suited to operate and maintain the Village's water and wastewater systems:

a. **Internal provider model** where a municipal department, municipal corporation, or public utilities commission of the municipality in question is the operating authority. Approximately 60% of municipalities in Ontario use this model to deliver water O&M services
b. **External provider model** where a quasi-public provider, another (typically larger) neighboring municipality or municipal corporation, or a private provider is the operating authority. In Ontario approximately 40% of municipalities use external providers which are split as follows:
    - Municipalities where the Ontario Clean Water Agency (an arms-length Crown agency) is the operating authority. Approximately 30% of Ontario municipalities serving 4.5 million people use this option to deliver water O&M services
    - Municipalities where another neighboring municipality, municipal corporation or a private sector provider is the operating authority. Approximately 10% of Ontario municipalities use this option to deliver water O&M services

- **Report and Recommendations**

The report, including an options financial analysis was presented to the project team December 29th, 2022, followed by a Council presentation.

## 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.

Key Acts and Regulations which water system owners and operators are subject to include:

- ***Safe Drinking Water Act, 2002 (SDWA)***

Set's the framework for safe drinking water in Ontario. It is based on a multi-barrier approach to clean water including water source protection from contamination; effective treatment; frequent and comprehensive testing; vigilant monitoring and reporting; the training and competence of waterworks operators; a secure distribution system; and a quick response when problems are found. Key components include drinking- water quality standards, licensing for water-testing laboratories, approvals process for private water supply systems, duties on owners, operating authorities, and an annual drinking water report published by the Minister.


Regulations under the Act that must be adhered to by the Village include: Ontario Drinking Water Quality Standards (DWQMS) Regulation (O. Reg. 169/03), Drinking Water Systems Regulation (O. Reg. 170/03) as amended, Compliance & Enforcement (O. Reg. 242/05), Drinking Water Testing Services Regulation (O. Reg. 248/03), Certification of

Drinking-water System Operators & Water Quality Analysts (O. Reg. 128/04), Financial Plans Regulation (O. Reg. 453/07) which includes requirement for water and wastewater system owners to move towards the goal of sustainable financing of the full asset life-cycle, and Licensing of Municipal Drinking Water Systems (O. Reg. 188/07).

- ***Clean Water Act, 2006***

Together with the *Safe Drinking Water Act, 2002*, the *Clean Water Act, 2006* captures the multi-barrier response recommended by the Walkerton Inquiry. The Act seeks to protect sources of municipal residential drinking water systems by establishing multi-stakeholder, decision-making source protection committees which include municipalities. The committees are responsible for developing source water protection plans and for ensuring that activities (e.g., municipal planning decisions), conform to that source water protection plan.

- ***Water Opportunities and Water Conservation Act, 2010***

This Act intends to foster innovative water, wastewater and stormwater technologies, services, and practices in the private and public sectors; create opportunities for economic development and clean-technology jobs in Ontario; conserve and sustain water resources for present and future generations; and prepare sustainability plans for municipal water, wastewater, and stormwater services.

- ***Infrastructure for Jobs and Prosperity Act, 2010***

Specifically, O. Reg. 588/17: Asset Management Planning for Municipal Infrastructure. Steps to incorporating responsible asset management include establishing strategic asset management policies and developing increasingly sophisticated asset management plans and technical service level targets.

- ***Ontario Water Resources Act, 1990***

The purpose of this Act is to provide for the conservation, protection, and management of Ontario's waters and for their efficient and sustainable use, to promote Ontario's long-term environmental, social, and economic well-being. Regulation 129/04 requires licensing of sewage works operators.

These regulatory changes occurred in the drinking water sector following the completion of the Walkerton Inquiry and the implementation of the report's 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 additional 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 investment, operations, maintenance 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.

- **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 License 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.

- **Aging Infrastructure**

Water and wastewater system owners continue to tackle a growing infrastructure replacement gap. Infrastructure has often deteriorated without the provision of sufficient funds for maintenance, rehabilitation, and replacement. This requires owners or operators to implement preventive and predictive maintenance practices as well as ongoing asset management strategies to extend the life of existing infrastructure and reduce the need for future premature capital investments. It will also require municipal councils to support full cost recovery and approve increases in water rates as required.

- **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 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 meet or exceeds its expected economic life. This planning is based on current condition assessment and appropriate methodologies to estimate maintenance needs for various assets.

- **Labour Market**

The aging of the water and wastewater workforce has led to reduced availability of talent and further exacerbated the existing shortage of certified operators in Ontario. In addition, this will lead to challenges in succession planning and cause upward pressure on salaries. Succession planning is already challenging for municipalities with small systems that depend on a small workforce.

- **Economic Uncertainty**

The impacts of the last number of years on financial markets and supply chains is likely to be characterized by long-term inflation, leading to difficulties procuring goods and services on a timely basis and an increase in water and wastewater related prices. The financial pressures on municipalities are multi-faceted;

- Managing priorities vs municipal revenues.
- The need to keep water and wastewater services affordable for financially stressed customers; and
- Increases in operating expenditures (e.g., salaries & benefits, energy, chemicals, telecommunication) and capital expenditures (e.g., building materials, mechanical equipment, IT & SCADA).

This means municipalities will need to find operational efficiencies in the delivery of these services.

- **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.

To receive or renew a municipal drinking water license 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, it generally extends beyond the current operating cycle and usually covers a five-to-ten-year time frame.

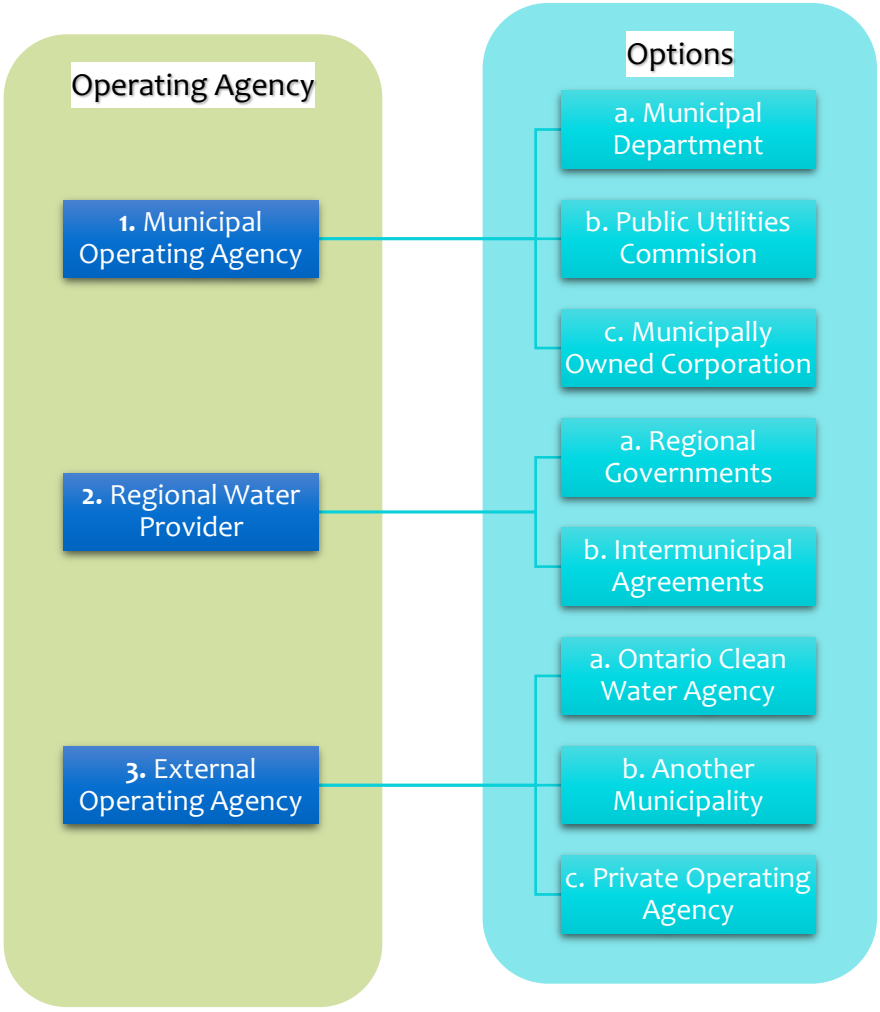
There are many different costs, both capital and operating, associated with planning, building, operating, and maintaining water and wastewater systems. This includes costs that reflect outputs not attributable to the provision of these services such as fire protection services, or environmental protection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

## SERVICING OPTIONS

Options to consider include whether to operate the 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.

The areas where internal provider model scores higher than external providers include:

- **Responsiveness**, where water and wastewater staff in small municipal organizations often have a direct connection to senior management and sometimes to members of Council and are also more likely to live in the community. External providers will have to establish connections over time, and some try to have operations staff live close to or in the communities they

serve.

- **Level of Control**, where a small municipality's executive administration has direct control over water and wastewater staff, and, together with Council, can make all decisions related to these services. With an external provider, the relationship is managed through, and dependent on a Services Agreement which guides the relationship and decision- making between the municipality and the provider's representatives

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 and wastewater systems. Under this model, the corporation (whether for-profit or non-profit) operates the systems 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.

2. Regional Government Service Delivery

    a. Regions & Counties

A regional municipality (or region) is a type of government similar to municipal government in 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.

Like regions, county government is a federation of the local municipalities within its boundaries. Counties are referred to as "upper tier" municipalities. 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.

Most Common Upper Tier Services (excluding EMS)


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 the United County of Leeds and Grenville 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.

b. Intermunicipal Agreements

Intermunicipal Agreements 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 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

Shared services are typically where two or more local municipalities jointly provide:

- **External citizen-facing services** - services that municipalities provide to the local community, such as, fire protection, public transportation, recreation, and library services.
- **Back-office functions** - functions that support external services, such as information technology, finance, legal, payroll, and human resources; or,
- **Procurement** - purchase of goods and services.

Shared services may also include one or more municipalities partnering with other organizations outside of local government for the delivery of specific services. This is typically referred to as outsourcing.

Many municipalities explore the possibilities of shared services with the goal of reducing costs, increasing service quality, and providing better community outcomes. In addition to cost savings, there are other financial and non-financial benefits associated with shared services, including:

- Increased efficiency through the reorganization and sharing of assets
- Improved service delivery and consistency across regions
- Economies of scale
- Reduced duplication of processes
- Improved quality of service through a larger and more skilled resource pool; and,
- Support of local economies by sustaining local employment.

Despite the potential benefits that arise from shared service arrangements, municipalities can sometimes be reluctant to identify and pursue these opportunities. Geography can play a major role in dictating the extent to which municipalities are candidates for shared service arrangements, it can also be used as an excuse for ruling out any form of service sharing. As well, concerns over the impact on existing service levels are often cited as reasons not to pursue shared service arrangements despite the actual potential to enhance the quality of services provided to the residents.

Shared service agreements require careful consideration of both the structure and governance to ensure the partnership achieves the level of cooperation required to implement an effective shared services model.

3. External Operating Agency

Where a municipality decides not to operate its water and wastewater systems 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 (OCWA)

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 25+ years of safely and efficiently operating treatment and distribution/ collection systems across Ontario.

This is and has been the option for the delivery of Merrickville-Wolford's water and wastewater services for many years.

b. Another Municipality

A municipality can enter 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.

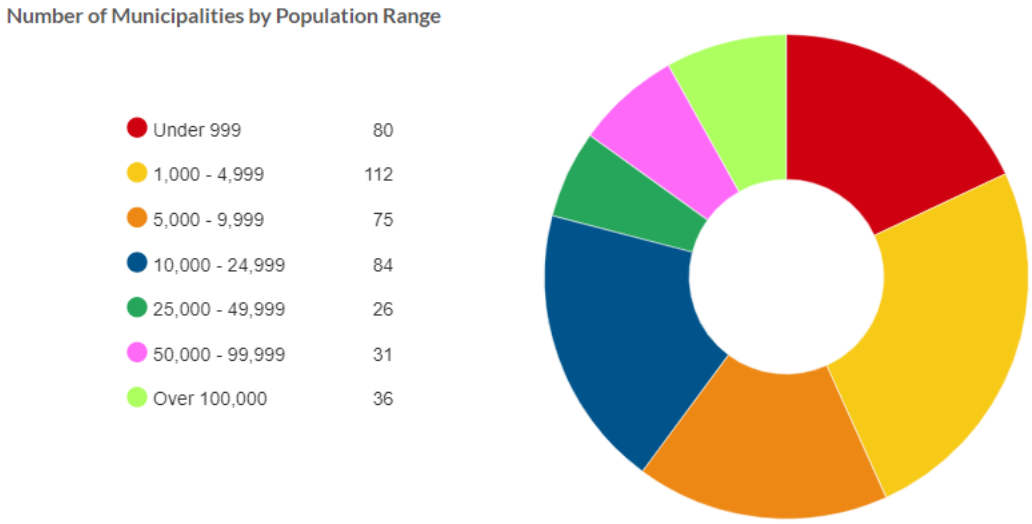
Managers of large water systems are often receptive to working out arrangements with smaller municipalities for the operation of the water systems in those communities. Such arrangements have the potential to benefit the larger municipality in terms of cost recovery, and the smaller municipality in terms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

c. Private Operating Agency

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

## MERRICKVILLE-WOLFORD OPTIONS ANALYSIS

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. While municipal autonomy is desired, and benefits can be gained by finding solutions to meeting capital and operational requirements at the local level, it does pose a financial challenge for the 60% of municipalities whose population is less than 10,000.




Therefore, for a municipality the size of Merrickville-Worford the water and wastewater services are in a unique and enviable position as noted in the Watson analysis which states:

"Financial analysis of the Village's current operations showed that the Village's 2022 water and wastewater rates are reflective of full-cost pricing principles and, as such, the Village's water and wastewater services would be considered financially sustainable.", further

"Financial sustainability of the Village's water and wastewater services can be attributed to the Village's effort to increase funding for these services over several years, as evidenced by the user rates having almost doubled since 2014. It should be noted that while the 2022 rates were found to be financially sustainable, the Village will need to continue increasing rates by approximately 3.2% annually to keep pace with inflationary pressures (assuming operating cost inflation of 2.4% annually and capital cost inflation of 4.2% annually)."

The Village owns the infrastructure for the municipal water and wastewater services. Therefore, it is important to remember that this comparison is looking at requirements to perform the regular duties currently provided under the OCWA contract.

## OCWA-CONTRACT MANAGEMENT AND OPERATIONS

The Village recently extended the contract to OCWA for provision of management and operation services for the Village's water and wastewater systems. The current 2-year agreement is in place from January 1, 2023, until December 31, 2024, at which point it will be renegotiated for a successive 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.

The Ontario Clean Water Agency provided the Village 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.

OCWA should be better positioned to reduce long-term risks for a small municipality including:

- Organizational risk - by ensuring availability of all required workforce skill sets, with built- in continuity and succession management. OCWA has a large pool of skill-sets available on an "as-needed" basis, including operator-mechanics, millwrights, compliance specialists as well as process and SCADA specialists.
- Process risk - by ensuring availability of specialists to optimize processes and equipment, reduce energy use and respond to emergencies.
- Risk of equipment failure – by planning and optimizing maintenance work to ensure full life-cycle asset care and protection.

The annual Ministry inspections do provide assurance that the systems are (and have been) operated to ensure they are meeting provincial operating requirements.

Third party contractors do not operate on a "revenue neutral" basis. The limited competition in this sector for management and operational services hampers the municipality from determining if the "mark-up" is acceptable to the services being provided.

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 OCWA contract language is a "boiler-plate" document used for their O&M services across the province. The language and terms of the contract hinder Village staff and Council from active participation while limiting the contractor's liability.

Specific contract issues identified by staff include:

- Costs
    - Service Fee- "Service Fee" means an additional fee charged to the Client when OCWA purchases materials, supplies, equipment, or contractor's services on behalf of the Client. The service fee rate schedule is excessive and doesn't align with current industry practices.
    - Management Fee- In addition to payment of the Estimate, as reconciled, the Village also pay OCWA an annual management fee (the "Management Fee"). The services the Management Fee covers are quoted as being for "Operational Support Services and indirect operating costs such as administrative, regulatory compliance, training, emergency support, and technology infrastructure."

      "OCWA's Operational Support Services are off-site resources required to support on-site operations. Programs that directly support the operations, maintenance and management of OCWA-managed facilities include:

        - OCWA's extensive Quality & Environmental Management (QEMS) program
        - OCWA's comprehensive Occupational Health & Safety (OH&S) program
        - Emergency Management Systems
        - Interpretation and implementation of new legislation including the new Statutory Standard of Care
        - Proprietary and other software systems including the use of PDC (Process Data Compliance), OPEX (Operational Excellence) and WMS (Work Management System) software
        - Liaison activities and corporate representation to the regulators on behalf of OCWA's clients
        - Purchasing and procurement services which benefit our clients through bulk procurement agreements with suppliers
        - Corporate resources in systems technology, accounting, public relations, and administrative support

- Costs for management of human resources including recruitment, training, and the Essential Services Agreement"

The above programs are simply "the cost of doing business" and are not unique to OCWA. Given that the OCWA's back-office support staffing compliment is substantial, the cost being applied to the Village (for each facility) seem to be disproportionate.

- Unexpected Expenses means unanticipated expenditures or additional costs which may include Major Maintenance Expenditures in addition to the Approved Major Maintenance Expenditures, that OCWA reasonably incurs in order to address a Change in Applicable Laws, any Uncontrollable Circumstance, any work required by regulatory order (e.g. MECP or MOL) or identified through an inspection (e.g. ESA, MECP, MOL) that is not solely the result of OCWA's negligence in performing the Services or any other emergency situation, together with the Service Fee.

  Staff report that these expenses occur regularly, as opposed to infrequently and are difficult to manage.

- Reporting

The contract language does provides for comprehensive reporting however, while there is some occurring, it appears to be sporadic, reactive, and not comprehensive enough to provide staff and Council with a fulsome picture.

The operating agency should 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.

- Performance Guarantees

With the omission of any performance guarantees there is a of lack incentive for innovation, continuous improvement initiatives, optimization, and conservation efforts.

If the Village decides to continue with an external service provider, any contract negotiations should strive to address the contractual gaps identified which will help to ensure effective and efficient management and operations.

## PRIVATE CONTRACTOR- MANAGEMENT AND OPERATIONS

There are several external water O&M service providers that would be capable and interested in responding to any request for proposals that may come from the Village to operate and maintain all or part of its water systems. A number of these vendors could also provide infrastructure financing and other water services in addition to O&M.

With the current term of the agreement expiring at the end of 2024, it is prudent to look at alternatives for providing the same or better level of service through a competitive Request for Proposal (RFP) in 2023. This option poses little or no risk, and it would provide an opportunity to modify the contract terms and language to address some of the historical challenges and may result in cost savings.

## VILLAGE 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.

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. On review of the contracted services, they would not constitute "specialized", and Village staff exercising these duties should be more diligent, effective, and accountable in the operation and maintenance of the systems.

### Water Treatment System

The main pumphouse consists of a pump header and appurtenances including a flow meter, discharging into a single cell reservoir with a storage volume of 590 $m^3$; two centrifugal high lift pumps, (duty and standby) connected to the pumping discharge main; one centrifugal fire pump; a sodium hypochlorite disinfection system with one chemical metering pump.

Well #1 consists of a drilled groundwater production well, equipped with a submersible deep well pump with its discharge line connected to the well pump header in the main pumphouse.

Well #2 consists of drilled groundwater production well equipped with a submersible deep well pump discharging to the clearwell in the main pumphouse.

Well #4 consists of a drilled groundwater production well equipped with a submersible deep well pump discharging to the clearwell in the main pumphouse; a sodium hypochlorite disinfection system consisting of one chemical metering pump injects sodium hypochlorite solution into the common raw water discharge line of Well Pump No.2 and 4.

**Water Distribution System**

The pressure for the distribution system is maintained by the high lift pumps at the main pumphouse as there is no elevated water storage. There are 400 water connections, 57 hydrants, 68 valves and 2 pressure blow-offs.

**Wastewater Treatment**

The Merrickville Wastewater system utilizes an ISAM treatment system. This system incorporates a surge/anoxic mix tank to optimally control the process and provides rapid and complete treatment. The surge tank provides flow and nutrient equalization to provide treatment at the full range of flows and loadings.

The secondary treatment process employs sequencing batch reactor (SBR) technology consisting of anaerobic tanks, anoxic tanks and a sequencing batch reactor. The Sequencing Batch Reactor incorporates an anaerobic selector chamber which provides consistent phosphorous removal by subjecting the recirculated biomass to anaerobic conditions, forcing the release of phosphorous, but also creates soluble carbon as a food source for phosphorous removal through anaerobic conversion of settleable BOD to soluble carbon. Additionally, anaerobic sludge digestion occurs in the anaerobic selector chamber, reducing waste solids production by up to 65% for the entire secondary process.

Effluent is disinfected using Ultraviolet disinfection.

**Wastewater Collection System**

There are approximately 400 residences connected to the sanitary sewer collection system. The raw sewage flows by gravity to the #1 sewage pumping station. From there it is pumped by two submersible pumps to the Sewage Treatment Plant.

There are three (3) main categories covered by the current external contract agreement.

1. Routine operation and maintenance of the Village's assets comprised of the water treatment plant, distribution valve maintenance and hydrant flushing and the wastewater treatment plant, pumping station and collection inspections.

2. Management activities that include oversight, coordination, and administrative functions.
3. Handling regulatory matters and reporting.

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 always available. To ensure that these conditions are met, it is best practices that 3 operators (3FTE) is considered the minimum.

1. **Operations Staff**

In reviewing staffing requirements for continuous operations, the current and historical operating staff levels provided by OCWA were used as guidance as well as industry best practices. OCWA 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).

Given the routine nature of the operations and maintenance duties the recommended operator staffing compliment would be 3 FTE operators jointly certified (WT, WD and WWT, WWC).

2. **Management**

As noted, 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.

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 wastewater services would be included as a division of the Public Works Department with the Supervisor reporting to and supported by

the Manager, Operations. It is recommended that a Supervisor of Water and Wastewater Service (1 FTE) would act as Overall Responsible Operator (ORO). This individual would be a non-union employee.

## 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. Drinking Water Quality Management System (DWQMS)

All municipal drinking water systems that provide water to residences in a community must have a license 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 license, 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.

Licenses 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 their systems for which they are responsible. The safety benefits of the quality management approach make it desirable to formalize operational

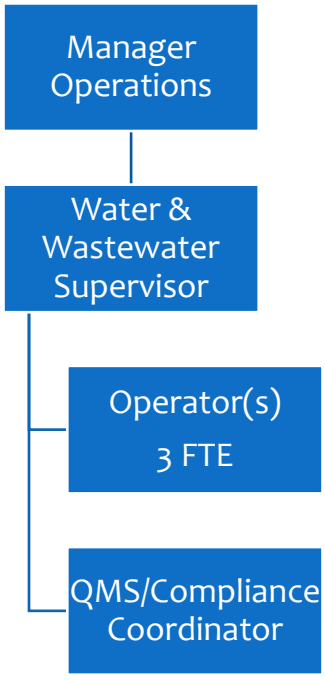
planning at the plant or system-specific level. All municipalities are required to have an operational plan for their water system or, depending on the size and complexity, for each component of the system (e.g., the treatment plant, distribution system, and monitoring system). The operational plan is 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 treatment certification so that he/she could be utilized in the field and included in the on-call/ standby rotation.

Should Council consider bringing the services under a municipal department, a Village DWQMS would have to be developed as would an operational plan. These submissions, application fees and a successful third-party audit would be required for the Village of Merrickville-Wolford to be considered an "Accredited Operating Authority".

**Proposed Structure**



**Transitionary Costs**

If Village Council decided to proceed with the in-house delivery for water and wastewater there would be costs associated with migrating from the current OCWA contract. As mentioned earlier the termination agreement provides for a minimum twelve (12) month notice to OCWA, thus giving Village staff time to plan for a smooth transition.

For staffing, it would be 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 Ministry to ensure that the Village 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 would need to be organized, as well as fleet vehicles. (2 pick-up trucks)

**Challenges and Risks**

The current contract requires the Village to provide a twelve (12) month notice of termination. Should the Village decide to be to bring the services in-house, once notice has been given the Village must be confident that they can attract, recruit, and on-board the necessary staff compliment.

The aging of the water and wastewater workforce has led to reduced availability of talent and further exacerbated the existing shortage of certified water operators in Ontario. Currently, there are approximately twenty-three thousand (23,000) certified operators in Ontario with only three thousand four hundred and fifty (3,450) with Class III licenses or higher which would be required for the ORO position. Further, there is an additional four thousand two hundred Class II (4,200). These numbers do not reflect those that hold dual certification in water and wastewater operations which would be required, so the talent pool to draw from would be considerably less.

Given that the wage range (dependent on certification levels) should be both comparable to current industry standard, and in-line with the Merrickville-Wolford salary grid this may be challenging.

Further, Section 6.6 of the OCWA contract restricts the Village from employing/ recruiting existing OCWA operations staff for a one (1) year period.

These challenges should be considered high risk.

## INTERNAL OPTION-FINANCIAL ANALYSIS

The expenditures for each component of the Village's water and wastewater operating budget were reviewed to determine where adjustments would be made under the alternative service option. The adjustments were estimated based on inputs provided by Aureus and are summarized in Table 2 below.

Potential cost savings were identified for items such as electricity, chemicals, biosolids, supplies and equipment. It is assumed that these cost savings could be realized if operations are managed directly by Village staff and with there being a greater incentive to seek operational efficiencies. The budget items where cost savings could be realized, along with the respective level of savings, are noted in Table 2 below. It is noted that these savings would likely only be realized over time, not immediately following the Village assuming operations.

The incremental annual operating costs under the alternative service option have been estimated at approximately $784,400, potentially decreasing to $772,300 in later years once the aforementioned cost savings are realized.

These incremental annual costs were then compared to the cost savings that would result from the removal of O.C.W.A. annual O&M costs, estimated to be $774,678 for 2023.

Based on the adjustments outlined above, the annual operating costs would be approximately 1.26% higher under the alternative service option. If the noted operational efficiencies and resultant cost savings could be realized, the annual costs would be approximately 0.31% lower under the alternative service option.

Table 2: Costs Related to Village Management and Operation (2022$)

| Description | Notes | Incremental Annual Cost | Potential Future Savings | Incremental Annual Cost (with savings) |
|---|---|---|---|---|
| Director of Public Works (0.10 FTE) | Existing position. Allocation of salaries and benefits to water/wastewater. Supervisor of Water/Wastewater Treatment will be a new direct report (see below). | $ 10,000.00 | 0% | $ 10,000.00 |
| Supervisor Water/Wastewater Treatment (1 FTE) | New position. | $ 97,500.00 | 0% | $ 97,500.00 |
| Certified Operators (2 FTEs) | New positions. Operators cross-trained for water treatment and wastewater treatment) | $ 169,000.00 | 0% | $ 169,000.00 |
| Compliance/ QMS Coordinator (1 FTE) | New position. Ability to perform the operator's duties as required on a part-time basis. | $ 84,500.00 | 0% | $ 84,500.00 |
| Summer/Co-op Student (0.33 FTE) | New position. | $ 17,160.00 | 0% | $ 17,160.00 |
| Overtime | Operations staff are required to respond after hours for alarm within the treatment facility. | $ 10,000.00 | 0% | $ 10,000.00 |
| Shift Premium/On-call | On-call premiums paid to operators on a rotational basis for ability to respond to alarm conditions. | $ 10,000.00 | 0% | $ 10,000.00 |
| Training | Under Ontario Regulation 128/04, Treatment Operator(s) require training to maintain their Ministry licenses. | $ 10,000.00 | 0% | $ 10,000.00 |
| Communications | The facility operations depend on cell phone use for the on-call operations as well as the day-to-day operations in the facility. | $ 5,000.00 | 0% | $ 5,000.00 |
| Laboratory Samples | Requirement per Drinking Water permit. | $ 15,000.00 | 0% | $ 15,000.00 |
| Administration | Currently budgeted under "Administrative Costs" ($10,000 in 2022 Budget). Includes accounts payable, accounts receivable, human resources, and corporate service support. | $ - | 0% | $ - |
| Insurance | The cost to insure these operations corporately. Currently provided by Contractor. | $ 38,000.00 | 0% | $ 38,000.00 |
| Electricity | Currently provided by Contractor. | $ 80,100.00 | 5% | $ 76,095.00 |
| Chemicals | Currently provided by Contractor. | $ 16,000.00 | 5% | $ 15,200.00 |
| Biosolids | Currently provided by Contractor. | $ 16,000.00 | 5% | $ 15,200.00 |
| Major Maintenance | Currently provided by Contractor. | $ 25,000.00 | 0% | $ 25,000.00 |
| Services | Currently provided by Contractor. | $ 111,250.00 | 0% | $ 111,250.00 |
| Supplies and Equipment | Currently provided by Contractor. | $ 64,900.00 | 10% | $ 58,410.00 |
| Fleet | Fuel and servicing through Public Works. | $ 5,000.00 | 0% | $ 5,000.00 |
| **Total** | | **$ 784,410.00** | | **$ 772,315.00** |

In addition to the ongoing operating cost impacts outlined above, several transition costs could be expected to be incurred in the 12 months prior to the Village assuming operations. During this transition period, the Village would continue to operate under the existing operating contract with O.C.W.A. The transition costs are summarized in Table 3 below.

Table 3: Transition Costs

| Description | Type | Cost Estimate (2022$) |
|---|---|---|
| 2 Operations staff (project 2 months) | Operating | $24,000 |
| Supervisor Water/Wastewater (project 4 months) | Operating | $25,000 |
| Compliance/QMS Coordinator (project 4 months) | Operating | $24,000 |
| Accreditation-permitting/ auditing fees | Operating | $7,500 |
| Recruitment- External support | Operating | $10,000 |
| Shop/Facilities Set-up | Operating | $20,000 |
| Fleet - purchase of 2 vehicles – Pick-up trucks | Capital | $120,000 |
| **Total** | | **$230,500** |

Accounting for the transition costs noted above, total costs under the alternative service option would be higher than under the status quo.

**Conclusion**

Based on the inputs and analysis summarized above, the alternative service option (i.e., the Village assuming the management and operation of the water and wastewater systems) would not provide financial benefits relative to the status quo

## SHARED SERVICES, PARTNERSHIPS

Given the increasing financial pressures on small municipalities and the various issues and trends identified earlier, it will force Councils and staff to look for more opportunities to collaborate with others.

The Ontario Municipal Act Section 20(1) allow for Joint Undertakings- "A municipality may enter into an agreement with one or more municipalities or local bodies, as defined in section 19, or a combination of both to jointly provide, for their joint benefit, any such matter which all of them have the power to provide within their own boundaries. 2001, c.25, s20(1)"

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 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

There are a wide range of potential delivery models available for shared services for municipalities to consider:

- Resource Sharing- contractual arrangements between local municipalities to share key resources (plant equipment or personnel) to achieve efficiencies and lower costs. Typically, one municipality employs the resource and hires out to the other(s) on a "time and material" basis
- Centralized Services- relocation of multiple delivery sites or services to one centre that serves across the participating municipalities.
- Joint Venture- establish stand-alone incorporated entity to share costs and risk of providing those municipal services and infrastructure.
- Outsourcing- Key municipal services outsourced to the private sector or external public sector entities.

### ➢ Sharing of Physical & Human Resources

Resource sharing refer to arrangements between local municipalities to share financial, human, or physical resources to achieve common objectives. The typical main drivers behind resource sharing are efficiency and reduced costs. One municipality may own a resource and hire it to another municipality during off peak periods. Alternatively, two or more municipalities may jointly own a resource and share it on an agreed basis.

While the contract with OCWA provides a variety of functions to the Village, the primary responsibility is the supply of labour (human resources) required for the operation, maintenance, and management of the systems.

It is recommended that the Village engage either of their neighboring municipalities (Smith Falls, North Grenville) to seek negotiation of a contractual relationship for the supply of staff necessary for the Village system operations.

Since neither of the neighboring operations would be considered large systems, they are impacted by similar issues and trends in the industry as discussed earlier. As a result, they may be receptive to working out arrangements with the Village for the operation of their systems.

Such arrangements have the potential to benefit the larger municipality in terms of cost recovery, and while supporting the Village they would strengthen their internal staffing complement, thus increasing their flexibility and resiliency.

For the Village, it would be anticipated that a similar level of service at a lower annual cost could be achieved under such an arrangement.

Although competent staffing for operations and management is the key driver, other efficiencies beneficial to both parties could be explored. 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/ Technical Services
- IT

## CONCLUSION

Costs and improved level of service are the determining factors in decision-making of service delivery options. As detailed in the financial analysis, the Village water and wastewater services are in the enviable position to be considered financially sustainable.

While internal management and operations may result in an increased level of service due to more effective and efficient operations, as indicated through the financial analysis this would not result in any negligible savings.

Prior to any agreements in principle with neighboring municipalities, a cost savings financial analysis isn't possible, but a shared services arrangement could potentially benefit both parties. As mentioned the larger partner would gain a new revenue stream, and a means to enhance their staffing resiliency, and for the Village, cost savings. It is recognized however that this option would need both the political will, and a willing partner.

Given the analysis, continuing under a contracted service model is a viable option. It would be advisable for the Village to seek proposals from external agencies through a competitive RFP process. A new contract could lead to lower costs and would provide an opportunity to incorporate beneficial contract language that provide Village staff and Council with more ability to monitor system performance and evaluate continuous improvement initiatives.

## 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*.

## APPENDIX A- WATSON SERVICE DELIVERY REVIEW- FINANCIAL ANALYS

# Memorandum

| | |
|---|---|
| **To** | Doug Thompson, Aureus Solutions Inc. |
| **From** | Peter Simcisko, Watson & Associates Economists Ltd. |
| **Date** | December 29, 2022 |
| **Re:** | Village of Merrickville-Wolford Water and Wastewater Service Delivery Review – Financial Analysis |

Fax ☐ Courier ☐ Mail ☐ Email ☒

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 Village of Merrickville-Wolford (Village).

The objective of the Service Delivery review is to identify and evaluate alternative service options with respect to operations and maintenance of the Village's water and wastewater systems. The financial analysis summarized in this memorandum has been prepared to assess the financial impacts resulting from a potential change to the "Village Management and Operations" option (alternative service option).

**Background**

The Village has a present population of approximately 3,135 people, based on the 2021 Census. The Village provides services to approximately 461 water customers and approximately 403 wastewater customers. The Village owns all of the infrastructure; however, operations and maintenance are contracted out to Ontario Clean Water Agency (O.C.W.A.).

All customers are currently billed bi-monthly, using a combination of a monthly base charge (imposed per unit) and a consumptive rate applied to metered water consumption (for consumption beyond what is included in the monthly base charge). The monthly base charge includes 7.5 $m^3$ of consumption per residential unit and 15 $m^3$ of consumption per non-residential unit. The water and wastewater rates currently imposed are summarized below in Table 1.

Plaza Three
101-2000 Argentia Rd.
Mississauga, Ontario
L5N 1V9

Office: 905-272-3600
Fax: 905-272-3602
www.watsonecon.ca

Table 1: 2022 Water and Wastewater Rates

| 2022 - Water & Wastewater Billing Rates | | |
|---|---|---|
| **Base Charge (per month)** | | |
| Independent Residential Unit | $ | 153.53 |
| Independent Residential Unit (Water Only) | $ | 51.18 |
| Multiple Residential Unit | $ | 153.53 |
| Industrial/ Commercial/ Institutional Unit | $ | 235.53 |
| **Volume Charge** | | |
| Independent Residential Unit (per $m^3$ over 7.5 $m^3$) | $ | 8.17 |
| Independent Residential Unit (Water Only) (per $m^3$ over 7.5 $m^3$) | $ | 2.71 |
| Multiple Residential Unit (per $m^3$ over 7.5 $m^3$) | $ | 8.17 |
| Industrial/ Commercial/ Institutional Unit (per $m^3$ over 15 $m^3$) | $ | 8.17 |
| Water from Hydrants (per $m^3$) | $ | 3.63 |

## Financial Analysis of Current Operations

Financial analysis of the Village's current operations showed that the Village's 2022 water and wastewater rates are reflective of full-cost pricing principles and, as such, the Village's water and wastewater services would be considered financially sustainable.

The analysis was based on a review of the Village's 2022 operating and capital budgets, and 2022 Asset Management Plan. Budgeted revenues (including operating revenues and billing revenues) fully cover budgeted operating costs and lifecycle funding requirements of capital assets. Adequacy of revenues to cover asset lifecycle funding requirements was assessed by comparing budgeted capital-related costs (which include annual debt payments, funding of capital from operating, and contributions to capital reserves) to the annual lifecycle funding target identified in the Village's 2022 Asset Management Plan for Core Assets. It should be noted, however, that approximately 41% of the Village's budgeted capital-related costs comprise repayment of debt, some of which (related to the sewage treatment plant upgrade) will not be fully repaid until 2044. This may pose a cashflow challenge if major lifecycle investments are required for the sewage treatment plant before that time. Full financial details of the Village's current water and wastewater operations are provided in Appendix A.

Financial sustainability of the Village's water and wastewater services can be attributed to the Village's effort to increase funding for these services over several years, as evidenced by the user rates having almost doubled since 2014. It should be noted that while the 2022 rates were found to be financially sustainable, the Village will need to continue increasing rates by approximately 3.2% annually to keep pace with inflationary

pressures (assuming operating cost inflation of 2.4% annually and capital cost inflation of 4.2% annually).

**Alternative Service Option: Inputs & Analysis**

This section provides a summary of the financial analysis of the alternative service option.

The expenditures for each component of the Village's water and wastewater operating budget were reviewed to determine where adjustments would be made under the alternative service option. The adjustments were estimated based on inputs provided by Aureus and are summarized in Table 2 below.

Potential cost savings were identified for items such as electricity, chemicals, biosolids, supplies and equipment. It is assumed that these cost savings could be realized if operations are managed directly by Village staff and with there being a greater incentive to seek operational efficiencies. The budget items where cost savings could be realized, along with the respective level of savings, are noted in Table 2 below. It is noted that these savings would likely only be realized over time, not immediately following the Village assuming operations.

The incremental annual operating costs under the alternative service option have been estimated at approximately $784,400, potentially decreasing to $772,300 in later years, once the aforementioned cost savings are realized.

The incremental annual costs under the alternative service option were compared to the cost savings that would result from the removal of O.C.W.A. annual O&M costs, estimated to be $774,678 for 2023.

Based on the adjustments outlined above, the annual operating costs would be approximately 1.26% higher under the alternative service option. If the noted operational efficiencies and resultant cost savings could be realized, the annual costs would be approximately 0.31% lower under the alternative service option.

Table 2: Costs Related to Village Management and Operation (2022$)

| Description | Notes | Incremental Annual Cost | Potential Future Savings | Incremental Annual Cost (with savings) |
|---|---|---|---|---|
| Director of Public Works (0.10 FTE) | Existing position. Allocation of salaries and benefits to water/wastewater. Supervisor of Water/Wastewater Treatment will be a new direct report (see below). | $ 10,000.00 | 0% | $ 10,000.00 |
| Supervisor Water/Wastewater Treatment (1 FTE) | New position. | $ 97,500.00 | 0% | $ 97,500.00 |
| Certified Operators (2 FTEs) | New positions. Operators cross-trained for water treatment and wastewater treatment) | $ 169,000.00 | 0% | $ 169,000.00 |
| Compliance/ QMS Coordinator (1 FTE) | New position. Ability to perform the operator's duties as required on a part-time basis. | $ 84,500.00 | 0% | $ 84,500.00 |
| Summer/Co-op Student (0.33 FTE) | New position. | $ 17,160.00 | 0% | $ 17,160.00 |
| Overtime | Operations staff are required to respond after hours for alarm within the treatment facility. | $ 10,000.00 | 0% | $ 10,000.00 |
| Shift Premium/On-call | On-call premiums paid to operators on a rotational basis for ability to respond to alarm conditions. | $ 10,000.00 | 0% | $ 10,000.00 |
| Training | Under Ontario Regulation 128/04, Treatment Operator(s) require training to maintain their Ministry licenses. | $ 10,000.00 | 0% | $ 10,000.00 |
| Communications | The facility operations depend on cell phone use for the on-call operations as well as the day-to-day operations in the facility. | $ 5,000.00 | 0% | $ 5,000.00 |
| Laboratory Samples | Requirement per Drinking Water permit. | $ 15,000.00 | 0% | $ 15,000.00 |
| Administration | Currently budgeted under "Administrative Costs" ($10,000 in 2022 Budget). Includes accounts payable, accounts receivable, human resources, and corporate service support. | $ - | 0% | $ - |
| Insurance | The cost to insure these operations corporately. Currently provided by Contractor. | $ 38,000.00 | 0% | $ 38,000.00 |
| Electricity | Currently provided by Contractor. | $ 80,100.00 | 5% | $ 76,095.00 |
| Chemicals | Currently provided by Contractor. | $ 16,000.00 | 5% | $ 15,200.00 |
| Biosolids | Currently provided by Contractor. | $ 16,000.00 | 5% | $ 15,200.00 |
| Major Maintenance | Currently provided by Contractor. | $ 25,000.00 | 0% | $ 25,000.00 |
| Services | Currently provided by Contractor. | $ 111,250.00 | 0% | $ 111,250.00 |
| Supplies and Equipment | Currently provided by Contractor. | $ 64,900.00 | 10% | $ 58,410.00 |
| Fleet | Fuel and servicing through Public Works. | $ 5,000.00 | 0% | $ 5,000.00 |
| **Total** | | **$ 784,410.00** | | **$ 772,315.00** |

In addition to the ongoing operating cost impacts outlined above, several transition costs could be expected to be incurred in the 12 months prior to the Village assuming operations. During this transition period, the Village would continue to operate under the existing operating contract with O.C.W.A. The transition costs are summarized in Table 3 below.

Table 3: Transition Costs

| Description | Type | Cost Estimate (2022$) |
|---|---|---|
| 2 Operations staff (project 2 months) | Operating | $24,000 |
| Supervisor Water/Wastewater (project 4 months) | Operating | $25,000 |
| Compliance/QMS Coordinator (project 4 months) | Operating | $24,000 |
| Accreditation-permitting/ auditing fees | Operating | $7,500 |
| Recruitment- External support | Operating | $10,000 |
| Shop/Facilities Set-up | Operating | $20,000 |
| Fleet - purchase of 2 vehicles – Pick-up trucks | Capital | $120,000 |
| **Total** | | **$230,500** |

Accounting for the transition costs noted above, total costs under the alternative service option would be higher than under the status quo.

## Conclusion

Based on the inputs and analysis summarized above, the alternative service option (i.e., the Village assuming the management and operation of the water and wastewater systems) would not provide financial benefits relative to the status quo.

# Appendix A
## Detailed Financial Summary of Current Operations

**Table A-1: Capital Budget**

| Description | 2022 |
|---|---|
| **Capital Expenditures** | |
| STP Reserve Capacity Analysis/Master Plan | $ 39,412 |
| Pump replacements | $ 35,769 |
| Sanitary Sewer Infiltration & STP Inflow Study | $ 6,243 |
| Manhole Covers | $ 20,000 |
| STP OCWA Capital | $ 74,675 |
| Water OCWA Capital | $ 62,000 |
| Sanitary Sewer Grouting | $ 50,000 |
| W&WW Service Delivery Review | $ 152,640 |
| **Total Capital Expenditures** | **$ 440,739** |
| **Capital Financing** | |
| Provincial/Federal Grants | $ 152,640 |
| Debenture Requirements | $ - |
| Operating Contributions | $ 156,675 |
| W/WW Reserve | $ 131,424 |
| **Total Capital Financing** | **$ 440,739** |

**Table A-2: Water/Wastewater Reserves/ Reserve Funds Continuity**

| Description | 2022 |
|---|---|
| Opening Balance | $ 741,488 |
| Transfer from Operating | $ 172,010 |
| Transfer to Capital | $ 131,424 |
| Transfer to Operating | $ - |
| **Closing Balance** | **$ 782,074** |

**Table A-3: Operating Budget**

| Description | 2022 |
|---|---|
| **Expenditures** | |
| Operating Costs | |
| Environment - OCWA - Water | $ 358,898 |
| Environment - OCWA - Wastewater | $ 367,749 |
| Environment - Service Contract | $ 6,500 |
| Administrative Costs | $ 10,000 |
| Environmental - PIL Tax | $ 2,020 |
| Environment - Office Supplies | $ 500 |
| Environment - Utilities | $ 12,000 |
| Environment - Maintenance | $ 3,000 |
| Environment - Insurance | $ 17,992 |
| Environment - Line Break & connection Repair | $ 11,500 |
| Environment - New Service Conn Recoverab | $ 6,000 |
| Water meter replacement/repairs | $ 10,000 |
| Environment - Water/Sewer W.O. | $ 1,500 |
| **Sub-Total - Operating Costs** | **$ 807,659** |
| Capital-Related Costs | |
| Existing Debt Repayment | $ 230,327 |
| Transfer to Capital | $ 156,675 |
| Transfer to Capital Reserve | $ 172,010 |
| **Sub-Total - Capital-Related Costs** | **$ 559,012** |
| **Total Expenditures** | **$ 1,366,671** |
| **Revenues** | |
| Operating Revenues | |
| Sewer Revenue - Septage | $ 15,000 |
| Water And Sewer - Penalty | $ 18,000 |
| Fire dept | $ 24,483 |
| Bldg dept commercial base water | $ 2,328 |
| New Connects (building) | $ 10,000 |
| Library well sampling | $ 3,427 |
| W & S Connection Charge | $ 500 |
| Easton Corners CC well sampling | $ 3,427 |
| Cost recoverable | $ 6,000 |
| W & S Capital Replacement Charges | $ 34,000 |
| **Sub-Total - Operating Revenues** | **$ 117,165** |
| Billing Revenues | |
| Water Billing | $ 449,885 |
| Sewer Billing | $ 799,621 |
| **Sub-Total - Billing Revenues** | **$ 1,249,506** |
| **Total Revenues** | **$ 1,366,671** |