# IT Master Plan

## Final Report

April 2023

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# Table of Contents

## Version History

| Version # | Date | Prepared By | Prepared For | Comments |
|---|---|---|---|---|
| 1 | November 2022 | Perry Group<br>S. Chase, J. Lanaus, G. Walker | M. Nancekivell | 1st draft |
| 2 | February 2023 | S. Chase | M. Nancekivell | Revisions |
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| 5 | | | | |

# 1.0 Executive Summary

Over the last few years, the Town of Collingwood (the "Town") has built up a stable and secure technology environment and has built trust throughout the organization by delivering a high level of service. More recently, the Town has implemented remote work/flexible work options, has begun accepting applications and requests via email, and has processed and onboarded staff and volunteers using Cloud-based tools and personal devices. Many municipalities implemented digital services at a speed and scale that was never done before and introduced digital services (such as online meetings) that simply could not have been achieved in any other way.

To accomplish all this, organizations challenged themselves and upended long-held conventions and practices in servicing of the public.

The opportunity is immense to use technology across the Town to improve customer and staff experiences, streamline processes, increase productivity, and gain new insights using data. Implementation of Microsoft Teams for internal collaboration is an example of how quickly the Town was able to adopt a new technology as well as a new way of doing business.

The development of the Information Technology Master Plan (ITMP) started with a Current State Assessment. The process included interviews with staff, an online survey, and various tools to evaluate the current state. The outcome was promising. The foundational infrastructure of the technology environment is up-to-date and functioning well. The IT division and its services are rated with a high regard by the Town's user community. The leadership is committed to using technology and is eager to maximize the use of technology to provide more efficient services to customers.

While there are many positives, there are also areas where the Town has opportunities to improve, this is not uncommon. More online services to citizens, more integrated business systems and modernization of key technology platforms could help transform the way services are provided, however, IT funding and IT staffing levels are found to be lower than the industry standard and recommended levels. The ITMP has recommended solutions to improve these challenges.

## 1.1 Focus Areas

The Strategy focuses on the following Focus Areas of opportunity:

1. IT Infrastructure – Modern, Secure, Resilient, and Interoperable.
2. Digital Customer Services.

3. Modern and Automated Core Business Processes and Business Solutions.
4. Enabling a Modern/Digital Workplace – Giving People the Tools They Need to do the Job.
5. Leveraging the Full Power of Geographic Information System (GIS) and Data.

Details about the above Focus Areas can be found below in the Focus Areas section.

The ITMP has identified specific initiatives to be implemented over the next 5 years in the Work Plan. These initiatives are categorized by each Focus Area with high-level cost estimates and timelines.

To support this work, the Town must:

- Establish effective technology and digital governance to help stay committed to the priorities, to help focus on the progress, to eliminate barriers in using technology and to keep enhancing the digital literacy of the organization.
- Commit resources to address key funding and staffing requirements that have been identified as important factors to the effective maintenance of the current state as well as the implementation of the ITMP.

The Town has been improving the investments in technology over the years. A good technology foundation is in place to build the necessary layers and a committed leadership team and trusted IT team is in place. However, ongoing pressures to reduce/minimize corporate budget increases have limited the team's ability to increase staffing capacity to meet the increased requirements.

With these critical primary ingredients set, the Town is well-positioned to implement the ITMP.

# 2.0 Introduction

Perry Group Consulting (PGC) is a firm that specializes in technology in municipalities. Our mission is *building better municipalities* and we have worked with over 150 municipalities across Canada on technology strategy and planning work, business process optimization and solutions implementation.

Perry Group was hired by the Town of Collingwood (the "Town") through an RFP process to develop an ITMP and to provide the Town with recommendations on how to modernize IT service delivery.

The project began in July 2022 and was sponsored by the Town's Executive Director, Corporate and Community Services and the Manager of Information Technology Services (IT).

Perry Group is pleased to be able to help the Town develop this new IT Master Plan as we assisted in the previous Assessment, created in 2018. Throughout this Report, we identify areas where we see the Town has progressed significantly in the technology environment enabling the Town to move to the next level of service delivery.

## 2.1 Purpose of this Report

The Current State Report – submitted earlier in this engagement by Perry Group – reviewed foundational areas such as the technical infrastructure, business solutions, policies and procedures, and IT Service Management (ITSM) Practices. It identified areas that were working well and in a good position to move forward, as well as areas that require further attention.

This Final Report provides details on the opportunities, the prioritization processes and an understanding of the expected benefits.

## 2.2 Developing the IT Master Plan

Given the importance of technology and data to the Town, from the outset, this project was approached as an enterprise initiative, not just an IT project.

The project was essentially developed in two phases:

**Discovery**: A Current State Assessment was conducted by the consulting team that involved input from all staff via an online survey, assessments of current technologies and systems management practices against municipal standards, interviews with the IT team, as well as virtual meetings with the CAO, Department Heads and representatives from all departments.

The focus for this phase was not only to develop a “SWOT” (Strengths, Weaknesses, Opportunities, Threats) assessment of current conditions, but also to curate information that could help focus future efforts in response to corporate needs and objectives. At the conclusion of this phase, a current state summary was compiled and reviewed with the IT Steering Committee (ITSC), which is comprised of key senior leaders.

**Strategy**: Numerous working sessions with staff and the ITSC were held to establish important strategic directions. We worked collaboratively with Department Heads several times through workshops and discussions to define a vision for the Strategy and set the principles that underpin it.

**Plan**: The consulting team worked with the Manager of IT and with the ITSC to prioritize opportunities for modernization and to develop a series of recommendations, an Implementation Plan and prepare this final written IT Master Plan.

## 2.3 Acknowledgements

Perry Group would like to acknowledge the active involvement, cooperation and support of Collingwood’s staff, leadership and stakeholders throughout this project. Also, the open support and engaged collaboration of the IT Team.

# 3.0 Discovery Process – Findings

## 3.1 Key Positives – What's Working Well?

Technology infrastructure underpins almost everything the Town does. IT infrastructure includes email, voice, radio and data networks, servers, personal computers, business solutions and online services. The Town has continued to build on the previous IT Assessment, resulting in a strong foundation for technology and digital service delivery.

To date, the Manager, IT and the IT team have done an excellent job of building and managing this infrastructure, providing good PCs, fast network connections, reliable email services, etc. The staff survey indicates broad satisfaction with these core IT services, however, feedback also revealed increasing expectations from IT for even more services as well as a requirement for technology and tools that are not currently available at the Town.

Overall, leadership understands the impact that technology and digital can have on their respective businesses and service delivery. Freeing up internal staff resources through better use of technology and being able to provide services better are key goals.

Further work needs to be done to address and scale these needs across the organization to identify and invest wisely in top corporate priorities.

## 3.2 Introducing the Municipal Technology Model

Perry Group's Municipal Technology Model (MTM) identifies the technologies that a fully mature municipality would be expected to have in place and provides a framework for the consulting team to assess a municipality's technology environment.

This is a generalized, conceptual municipal IT model, developed with Ontario municipalities over the last 10 years. The MTM introduces several key concepts that are important for Collingwood at this time.

An MTM was completed in 2018 as well and it is positive to note that advances have been made.

### 3.2.1 Five Technology Layers

There are five main technology layers as illustrated in the figure below – Infrastructure, Business Solutions, Integration and Data and Customer-Facing – and the Corporate Posture section that identifies policies, standards, and overall governance.

Each layer requires discrete IT skillsets to be managed effectively. For instance, while technology infrastructure management is deeply technical, project management around business solutions projects requires project experience, change management and soft skills.

An IT organization needs a breadth of skills in various domains to effectively manage the complete environment.

These are some of the basic tenets that underpin a well-designed municipal technology environment. The IT architecture should be built from the bottom up – Infrastructure first, then Business Solutions, and so on.

### 3.2.2 Assessing the Town's Technology Against the MTM

At the conclusion of the Current State Assessment, a Findings Report was prepared and shared with the IT Steering Committee.

The assessment completed in 2018 showed a number of noticeable gaps and challenges with many areas being identified as being "at risk" or "significant work needed". It is important to note here that many advancements have been made, particularly in the Infrastructure and Corporate Posture Layers. These are important as they are key to building the right environment for Business Solutions and Customer-Facing applications to be reliable and stable.

The MTM diagram below colour codes the results of the review and provides a visual summary of the results of the consultant's assessment (further details of the evaluation follow the diagram).

While not exhaustive (in terms of capturing all the elements of technology in use) the MTM provides good illustration (through a stop light grading system) that can help identify areas that are of risk to the Town, those that need work, as well as those that are in relatively good shape.

For instance, colour coding depicts the level of maturity for the different parts of the technology framework, with corresponding expression of "Good Shape", "Some Work Needed", "Major Work Needed", "Risk / Replace" and "Gap".

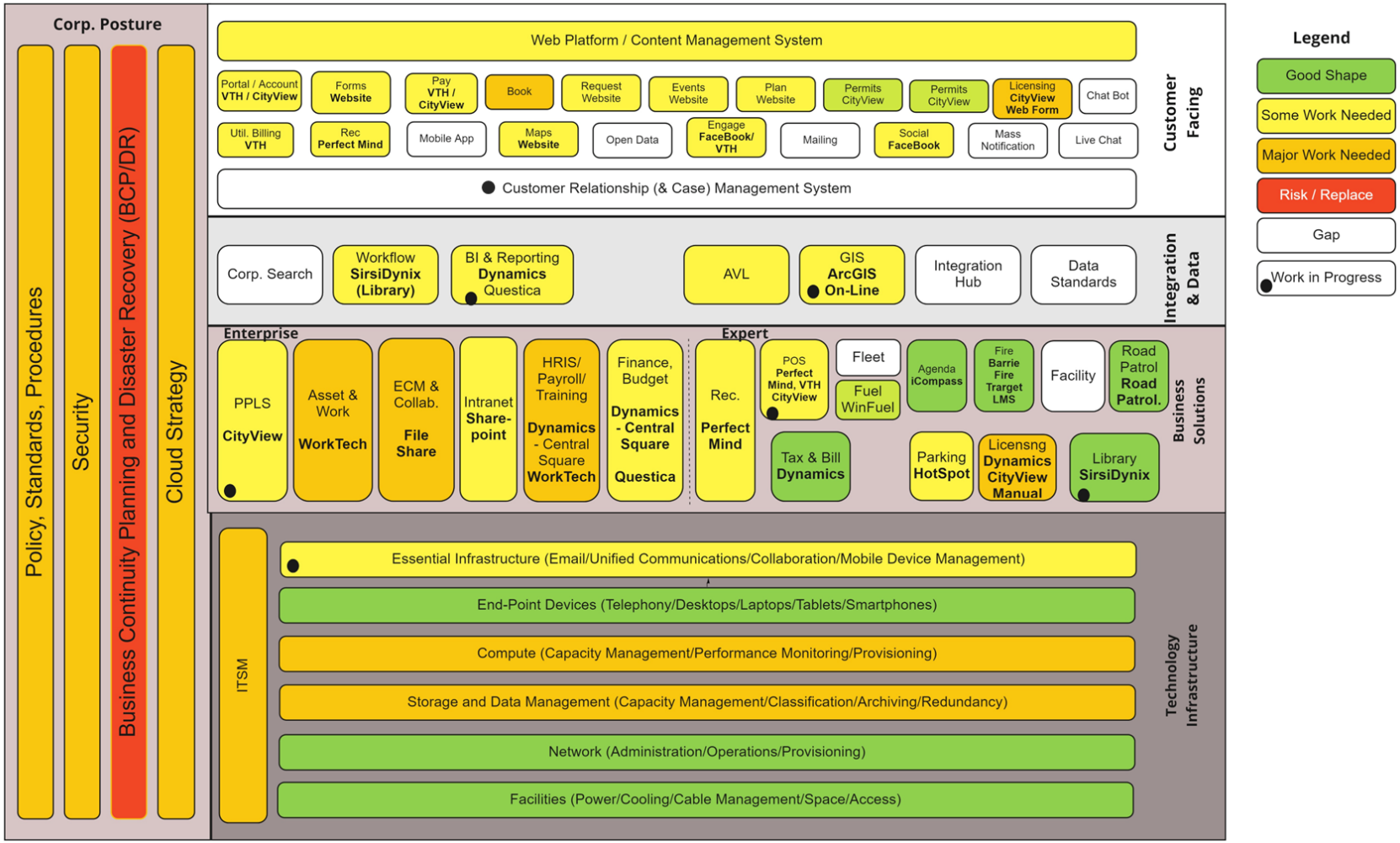



*Figure 1: Municipal Technology Model – Collingwood Assessment*

### *Technology Infrastructure*

Out of the five layers of technology, the Town's Infrastructure Layer is the strongest with a solid infrastructure with good investments in technology. Nothing is flagged as a major risk. This solid foundation in the Infrastructure Layer allows the Town to build the other layers on top.

**Positive Aspects**:

- Great internet connectivity positions the Town well for Cloud initiatives.
- The current IT Service Catalogue serves as a good starting point for expansion and continued improvement.
- Monthly vulnerability scanning (Nessus) with actions against critical and high-risk items.
- Air-gapped backup process to offline disk (servers) is good practice.
- Scale (HC3) hyperconverged infrastructure is a top-tier solution.

**Key Concerns**:

- Limited practices in place for ITSM.
- Need for focus on data and storage management. Multiple solutions are in place and used ad hoc, however, a formal Strategy or Plan that includes document management, records management and supporting policy has not been defined.
- An aging municipal phone system should be reviewed.

### *Business Solutions*

The Town's Business Solutions Layer requires some work. Some areas have implemented enterprise-grade solutions while overall enterprise-level visioning seems to be lacking. Solutions have not been leveraged to take full advantage of the functionality.

**Positive Aspects**:

- Several key best-of-breed solutions are in use.
- Great Plains solution has been working well though there are some concerns about vendor support.
- CityView solution has been well-implemented for the Building permits process.

- CityView Portal recently implemented gives customers self-service access to data.
- PerfectMind (implemented in 2019) is a best-of-breed solution for Recreation program management.
- Several RFPs for solutions for master plans are scheduled such as an HR Master Plan and the Property Development Process Review.
- A customer service tracking solution has just been acquired (at the time of the writing of this Strategy, the solution was selected but the Implementation Plan has not yet started).

**Key Concerns**:

- Limited formal support from IT – they do the best they can with limited staffing capacity.
- Some solutions are not fully leveraged and do not deliver all the functionality required (i.e., CityView). It is noted that limited staffing capacity across the organization to examine future opportunities and to engage in learning functionality beyond the immediate need has contributed to this lack of utilization of the solutions.
- Online digital services are not consistently connected to back-end business solutions.
- Worktech solution for Asset Management, Work Order Management and Time and Attendance is not integrated with Financial systems and staff find the interface difficult to use and reporting unintuitive.
- Records management (digital *and* paper) is a challenge corporate-wide – no concise solution for searching, retrieving, archiving.
- Unstructured data on the network servers does not have a retention policy.
- Limited training has been provided to fully understand capabilities of solutions.
- Staff expressed the need for many new solutions to help solve business problems but there is the recognition that IT does not have the capacity to assist with research or to deliver and provide ongoing support based on the current staffing limitations.

### *Integration*

There are very few integrations between systems which has led to duplication and redundancy of data and workload. Extra effort is required to keep the different systems current.

GIS offers opportunities to improve integration, especially between the various property-based systems. Staff in all departments have expressed interest in data analysis and business intelligence – the challenge is the lack of resources to understand and deliver on data management.

There is strong potential for data analysis to be explored, however, staff will need to be trained and more resources allocated.

**Positive Aspects**:

- GIS environment is strong and based on best practices.
- Partnership with the County is in place providing several benefits such as data sharing.
- There is advanced use of GIS solutions in some areas of the Town (i.e., Engineering).

**Key Concerns**:

- Missing some key integrations between solutions.
- Some Business Solutions are integrated from a business unit needs only perspective; some are manual import/export functions.
- Data is often duplicated because of the lack of integrations.
- There is opportunity to leverage GIS solutions more (i.e., Public Works, Building, Economic Development).

### *Customer-Facing*

The Town has many online forms available, however, many of these are not fully integrated into back-office systems. This lack of end-to-end digital services increases the workload for staff and creates the risk of error or duplication.

**Positive Aspects**:

- Strong online presence with many eForms available for customers.
- Online engagement solution – Engage Collingwood.
- Virtual City Hall implemented in 2021 – tax and utility billing information.
- Online portal to CityView for customer self-service to property-related data.

- Online option to purchase transit passes.

**Key Concerns**:

- Limited support for the website – there is a plan to refresh the website possibly in 2023 (Library site as well).
- Search function is not functioning well on the website.
- Multiple points for customers to login.
- Variety of online payment options throughout the site.
- Limited workflow from eForms to back-end solutions.
- Maintaining the website is not the sole responsibility of IT. There needs to be greater corporate commitment to keeping web content and information current and accessible.

### *Corporate Posture*

All elements in this layer require attention.

**Positive Aspects**:

- Significant improvements have been made in this layer since 2018.
- Overall, some cybersecurity good practices are in place but there is no formal IT Security Strategy.
- Several key policies and standards are in place.
- Currently leveraging M365 (Exchange, SharePoint, OneDrive, Teams).

**Key Concerns**:

- No formal Cloud governance or supporting framework.
- Limited cybersecurity governance (mostly ad hoc with some great tools but nothing formalized).
- ITSM – there are no formal best practices (ITIL) with mostly undocumented ad hoc processes.
- There is no Corporate Business Continuity/Disaster Recovery Planning – there are no defined Recovery Time Objectives (RTOs) for core business services and there are no defined Recovery Point Objectives

(RPOs) for critical data/files. There is a draft plan in place for IT specific services but nothing in place from the business department service perspective.

## 3.3 The Municipal Online Services Assessment

When considering which services to offer online, comparing Collingwood's online services with other Canadian municipalities is a useful benchmark.

Perry Group has prepared a list of standard online services that municipalities across Canada typically offer to their citizens. Not every municipality offers every one of these services – but these are the most commonly offered.

Research suggests that common Canadian municipal practices see municipalities offering the following:

- A clear website that is easy to use, navigate and search.
- Social media presence (Twitter, Facebook, YouTube).
- Online Bids and Tenders.
- Online payments (taxes, parking ticket, fire/burn permits, animal registration).
- Elections (online voting).
- Online maps.
- Online permitting and licensing services that allow users to submit, pay, track, and manage online applications.
- Online submission, tracking and management of service requests.
- Online bookings for facilities, equipment, appointments.
- Online eForms (and online processes) in place of paper forms.

Perry Group's Municipal Online Services Assessment (MOSA) tool articulates a target state for the digital experiences that municipalities could, and arguably should, deliver to citizens based on industry best practices.

The assessment was conducted by visiting the Town's website and then attempting to find and/or complete the 44 customer experiences. Where we could not find the service, we reviewed it with the IT staff to confirm whether or not those service offerings were available. The results of the assessment are shown below.

| Collingwood | | | | | |
|---|---|---|---|---|---|
| Easy to use website | Y | Parking / infraction ticket payment | Y | Pay Taxes Online | Partial |
| Mobile website | Y | Parking permits / exemptions | Y | Tax account management | Y |
| Personalization | Y | Recreation program online booking | Y | Tax certificates | Y |
| Single Account | N | Rent a facility | Partial | Pay an invoice | Partial |
| Submit a service request | Y | Building permit application | Y | Sign permits | Y |
| Track a service request | Y | Book a building inspection | Y | Fire / Fireworks permit | Y |
| Responsive Web / App | Y | Submit digital plans | Y | Pet licence | Y |
| Customer knowledge base | N | Submit development application | Y | Theatre Tickets | Y |
| Online chat with CSR | N | Track development application | Partial | Road closures | Y |
| Tweet for help | N | Site suitability / selector / vacant land | N | Snow clearance status | N |
| eForms | Y | Employment search and applications | Y | Filming permits | N/A |
| Open Data | N | Council / committee web streaming | Y | Business licences | Y |
| Digital Signatures | Partial | Online Agendas / Minutes | Y | Marriage Licence | Partial |
| Events calendar | Y | Grants programs | N | Online bid management | Y |
| | | Council delegation request | N | Transit planning | Y |
| | | 90/129 | | 69.7% | |

*Figure 2: Municipal Online Services Assessment – Collingwood Assessment*

### 3.3.1 Collingwood MOSA Assessment Results

| Yes | No | Partial |
|---|---|---|
| Easy-to-use website | Single account | Digital signatures |
| Mobile website | Customer knowledge base | Rent a facility |
| Personalization | Online chat with CSR | Track development application |

| Yes | No | Partial |
|---|---|---|
| Submit a service request | Tweet for help | Pay taxes online |
| Track a service request | Open data (Note the County does have an open data site that uses Collingwood's data) | Pay an invoice |
| Responsive web / app | Site suitability / selector / vacant land | Marriage license |
| eForms | Grants programs | |
| Events calendar | Council delegation request | |
| Parking / infraction ticket payment | Snow clearance status | |
| Parking permits / exemptions | | |
| Recreation program online booking | | |
| Building permit application | | |
| Book a building inspection | | |
| Submit digital plans | | |
| Submit development application | | |
| Employment search and applications | | |
| Council / committee web streaming | | |
| Online agendas / minutes | | |
| Tax account management | | |
| Tax certificates | | |
| Sign permits | | |

| Yes | No | Partial |
|---|---|---|
| Fire / Fireworks permits | | |
| Pet license | | |
| Theatre tickets | | |
| Road closures | | |
| Business licenses | | |
| Online bid management | | |
| Transit planning | | |
| **RESULTS: 90/129 = 69.7%** | | |

Overall, the website offers a good level of service and many of the applications are in place to increase online service delivery. It should be noted that some of the services currently not available are already being planned for, and if the initiatives identified in this IT Master Plan are executed, even greater improvements can be anticipated for online service delivery.

One challenge noted with the website and online services is that even though there are many online forms, most of these are not connected with back-end systems. This typically requires staff to do additional work and re-enter data into other systems for processing, thus increasing the risk of error.

Comparative assessments were also performed on Orillia, New Tecumseh, Barrie and Innisfil as well as several other municipalities and results were compared with Collingwood. Due to Collingwood scoring very highly compared to these other recommended comparators, Kingston and Markham were added to demonstrate stretch goals.

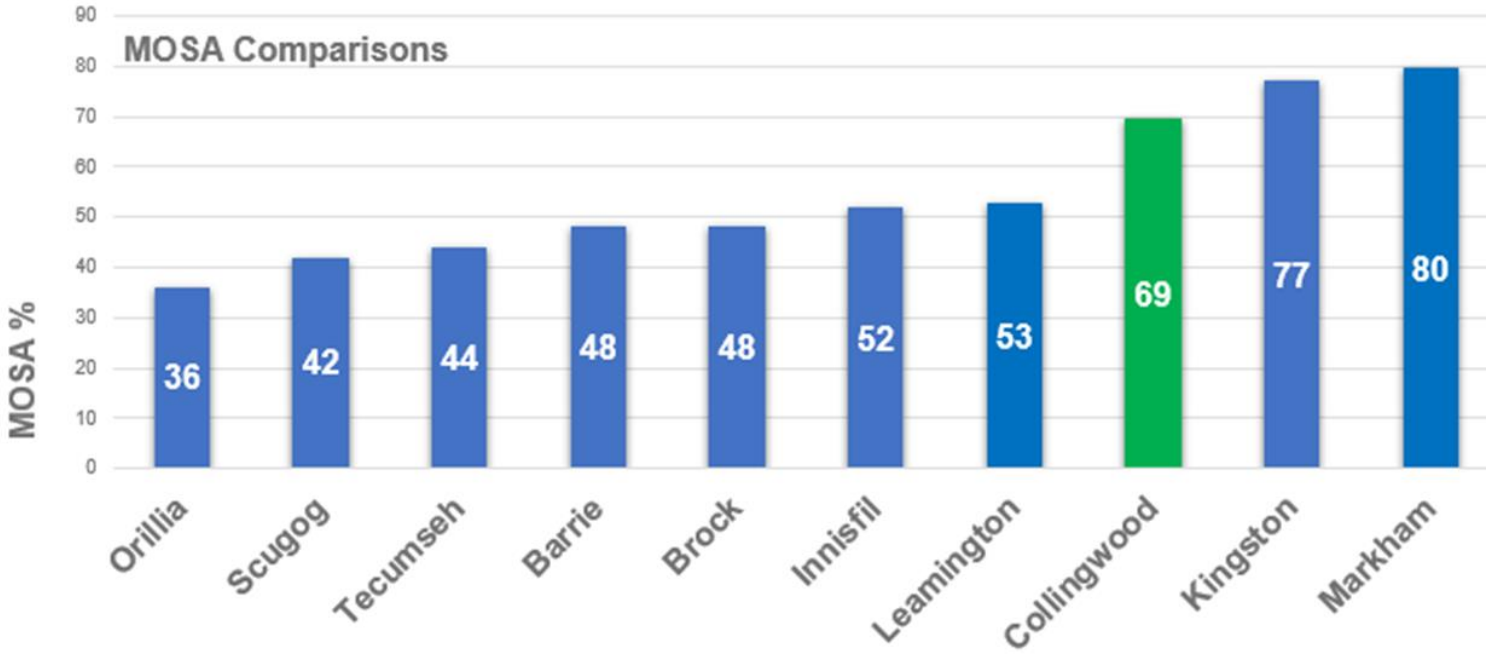



*Figure 3: MOSA Benchmarking with Other Municipalities*

## 3.4 Staff Survey Results

This project included the distribution of a survey as a way of reaching all staff and giving them the opportunity to provide feedback and ideas relating to the use of technology at the Town.

95 staff members – representing almost 40% of all staff – participated in the survey. The following are a few key insights from the survey results.

- Overall, most respondents were very satisfied with all IT services (94% expressed “satisfied” to “very satisfied”).
- Reliability of technologies is mostly satisfactory.
- Overall, and across all roles, over half the respondents identify as having advanced technological capabilities.

- Business Solutions is an area of opportunity for improvement with none of the key systems reaching the satisfaction target.
- Respondents are happy with the MS Office suite of products.
- GIS is a good system but used by only about half of respondents although 52% of overall respondents believe GIS tools would help them with their job.
- There is a desire to utilize GIS more with staff sharing lots of good ideas.
- Approximately 70% of staff feel that IT can provide proactive support.
- Only 68% of respondents are satisfied with the rate of technological change at the Town.
- Training has been received well but there is the desire for even more, specifically formal training rather than the current "on-the-job" training modes.

Several themes did emerge from both the survey results and the comments received. They are:

- Most staff are largely satisfied with IT and the job they do but would like to see growth in both team and talent, so IT is able to expand and enhance both its proactive capabilities as well as online services.
- Many staff would like to see bigger and corporate-wide use of GIS and data to aid in streamlining processes and informing decision-making.
- There should be better support and training in how to use the Town's systems and solutions to their greatest potential and advantage.
- Rationalize the myriad software solutions at the Town; amalgamate / decommission, as necessary; establish inter-departmental integrations with the resulting consolidated systems.

## 3.5 IT Organizational Structure, Function and Skills

The service provided by the IT division is highly appreciated. The staff survey as well as the departmental interviews showed that the staff across the organization are very satisfied with IT services.

The current structure of IT is small with responsibilities defined yet with many overlaps.

Due to the wide spectrum of services provided by the Town, there are certain niche business areas where the systems are supported directly by the vendor and IT staff have minimum exposure. With the growth of the

organization and continuous shifts in priorities, it's a challenge to keep up with the growth in the use of technology by IT staff. This challenge is mostly realized in the Business Solutions implementation and support area.

For instance, the function of business analysis is a Town-wide requirement and there is no staff member who has been fully trained to fulfill that need or who has the capacity to provide this service. Existing staff try to meet these responsibilities, but they don't always have the capacity due to other, more pressing duties.

A comparison of the staff resources of Collingwood with the industry best practices shows that the Town's current IT staffing level is below the minimum industry average.

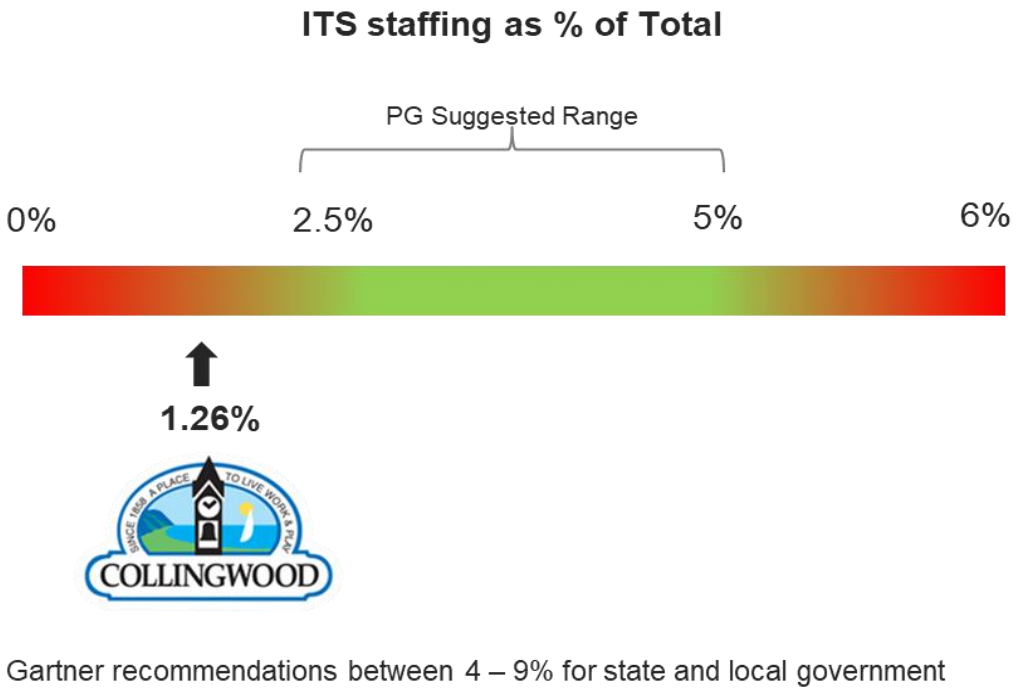



*Figure 4: Collingwood's Staffing Metrics*

## 3.6 Financial Analysis

Collingwood's annual IT Operating Expenses (OPEX) in 2022 was $693,976. The IT Operating Budget was significantly increased by 45% from a very low in 2017 ($306,108) to 2018 ($673,481). However, there has been less than a 1% increase since then. Considering how much more the organization is dependent on technology and how much more wide-spread technology use is, there appears to have not been ongoing investment in managing the growth.

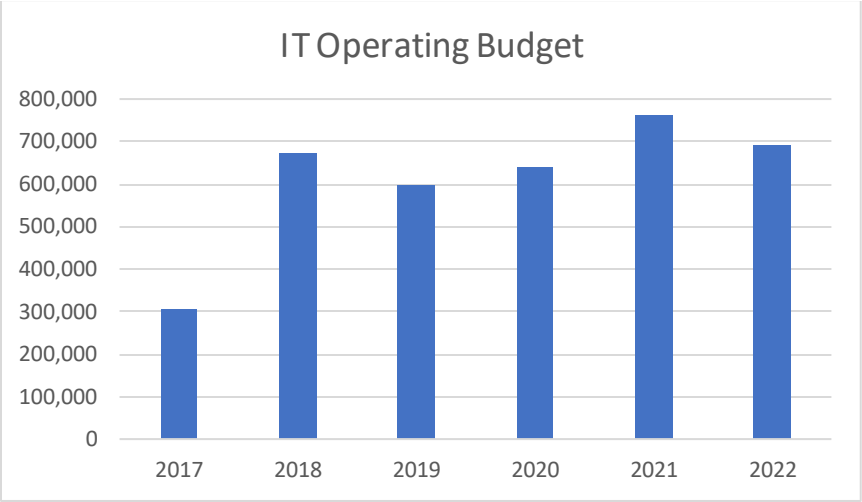



*Figure 5 IT Operating Budget 2017 - 2022*

Using multiple metrics, the consultants compared public sector IT spending with Collingwood's.

IT OPEX as a percentage of Total Operating Expenses is an important metric. The municipalities that are using technology effectively, are investing between 2.5% and 4.5% of their operating budget in technology. This recommended range is derived from years of data and over 100 municipal engagements by Perry Group Consulting.

| | |
|---|---|
| Collingwood's Total IT Operating Expenses | $693,976 |
| Collingwood's Total Municipal Operating Expenses | $64,295,718 |

| IT Operating Expenses as a Percentage of Total Operating Expenses | 1.08% |
|---|---|

The IT OPEX as a percentage of Collingwood's total OPEX is 1.08%, well below the lower end of PGC's acceptable range as shown in the diagram below.

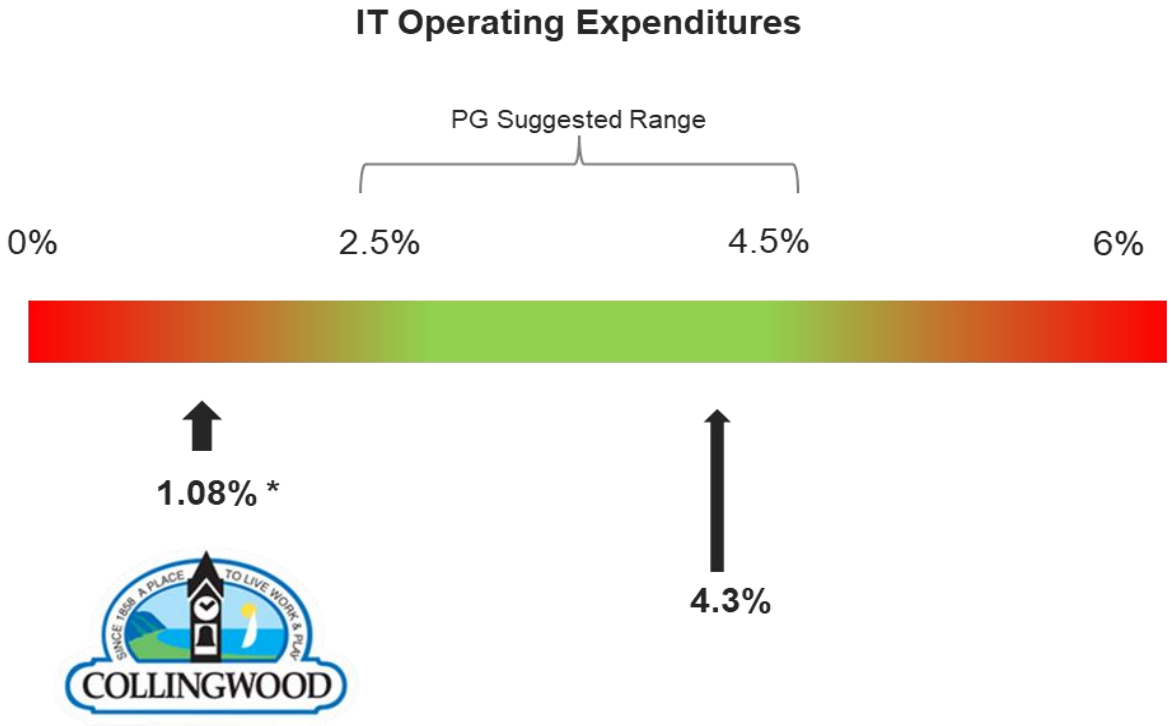



*Figure 5: Collingwood's Financial Metrics*

According to the IT Key Metrics Data 2019 by Gartner Research, public sector organizations in North America spent an average of 4.3% of their total budget on technology. Collingwood is much lower than Gartner's recommendations.

To reach higher levels of customer satisfaction and internal efficiencies, Collingwood has an opportunity to increase its technology funding to reach the Perry Group recommended levels.

| Municipality | Type | Population | # FTE | # IT Staff | IT Budget % Total Budget | 2021 IT Spend / FTE |
|---|---|---|---|---|---|---|
| Blue Mountain | Town | 9,390 | 250 | 6.5 | 3.61% | $ 5,115.00 |
| Scugog | Township | 21,600 | 85 | 1 | 1.00% | $ 4,133.00 |
| Owen Sound | City | 21,612 | 140 | 5 | 1.30% | $ 3,748.00 |
| **New Tecumseh** | **Town** | **23,229** | **120** | **4** | **0.90%** | $ 3,592.00 |
| Collingwood | Town | 24,811 | 248 | 4 | 1.26% | $ 3,853.00 |
| Leamington | Municipality | 27,595 | 140 | 5 | 2.80% | $ 9,409.00 |
| **Orillia** | **City** | **33,411** | **310** | **5** | **1.60%** | $ 4,016.00 |
| **Innisfil** | **Town** | **36,909** | **351** | **8** | **2.30%** | $ 3,603.00 |
| **Barrie** | **City** | **147,829** | **855** | **48** | **5.60%** | $ 11,566.00 |
| Markham | City | 359,884 | 1133 | 42 | 3.70% | $ 8,059.00 |

A tech savvy municipality is one in which technology underpins the processes to deliver efficient and effective government services to customers. To be tech savvy means becoming an organization that fundamentally recognizes the power of technology and the potential of combining technology and community to build a better place to live and work.

Historically, municipalities that spend more in IT are able to move ahead with more digital services and realize more savings compared to those that don't. Government organizations have been increasing their IT budgets consistently and that trend is expected to continue with more and more business processes moving to digital and online.

Collingwood could double its OPEX spending in IT to reach the Perry Group recommended spending of 2.5%. The Town also has an opportunity to increase its IT FTE by at least two to bring the IT FTE % toward the lower end of the Perry Group recommended range of 2.5%-4.5%.

## 3.7 Current State Assessment Summary

The Discovery Assessment confirms that Collingwood has matured the IT environment well and that it has opportunities for further growth and improvement.

People have consistently said that the “IT team does an excellent job with the limited resources they have”, however, expectations and the need for more IT expertise were expressed by each of the business units.

Meetings with teams from across the Town identified a broad variety of possible digital and technology initiatives that the Town could pursue that would result in streamlined processes and improved customer experiences.

There are many opportunities to improve the current situation but also to position the Town to be able to offer even more digital services to further help with streamlining and efficiencies. It will be important to prioritize the most impactful initiatives that align with strategic objectives and commit resources to implementation. Without additional resources, it is not feasible for IT to continue to offer much needed services (while maintaining current services) without risk of burnout of staff or increasing the potential for errors.

# 4.0 Setting Strategic Directions

## 4.1 The Context

Collingwood, like so many other municipalities, faced unprecedented challenges when the pandemic hit and required the municipal office to close, resulting in significant changes to service delivery and interactions with residents and businesses. Collingwood was well-positioned with technology and was able to transition many services – both internal and external – to online with relative ease, enabling staff to work remotely and allowing customers to continue to interact with the Town.

Even before Covid-19 and the execution of its technology-enabled business continuity measures, the Town was already heavily dependent upon technology. It is central to the Town's ability to deliver services as diverse as collecting taxes, kennel licensing, volunteer firefighter management, handling customer inquiries and managing recreation program registrations.

All these services today rely on technology to operate effectively and efficiently and would be significantly more costly to deliver without technology.

Along with the private sector, municipalities were also forced to move their business online with many staff working remotely. It was expected that technology challenges would be resolved quickly, and some municipalities were better positioned than others to move swiftly. Even simple remote access to email was a challenge for some. Collingwood was no different.

The Town of Collingwood is facing other pressures as well such as:

**Significant opportunities for improvements to existing practices for increased efficiencies:** As the Town grows, it simply becomes even more crucial to decrease the reliance on paper and knowledge-based processes in order to effectively coordinate activities and share information across larger teams, managing even more projects and more cases. To better manage and support the Town's growth requires digitized, integrated systems that the Town does not fully have in place.

**Growth means increasing complexity:** As the Town has experienced growth over these past couple of years – and expects to continue to grow – the complexity of the issues the Town deals with will grow. Accordingly, the importance of integrated planning and coordination across departments and agencies will also grow. Technology can play an important part in this area.

**Pressure on core services:** All departments are reliant on core corporate services including HR, Finance, IT and Communications, with HR and Financial processes in particularly being critical business processes that depend on technology. Despite systems implementation, there are still manual, paper-based processes related to time and attendance, Purchasing and Finance that inhibit the Town departments' ability to move at the speed they need, while balancing corporate controls. While email and smartphones keep every part of the organization connecting and communicating, it is the business solutions such as Great Plains and PerfectMind that allow managers and staff to operate efficiently through automated workflows, controls and reporting opportunities.

**Delivering customer service that meets expectations:** Technologies should support the "no wrong door" customer service approach – allowing customers to choose the channel (smartphone, web telephone, face-to-face) they wish to use to interact with the Town.

Common systems (as illustrated in the figure below) should create a consistent view of the customer – for customer service agents and frontline, back-office and field staff – and allow for simple dashboards and data analytics to support management and Council in the monitoring and oversight of service quality. With the pending start of a new Customer Service Solution Project, the time is opportune to plan for full end-to-end integration of processes.

As illustrated in the figure below, technology plays a major role in efficiently connecting separate parts of the organization – customers, councillors, staff and partners – whether across departments, or among customer service representatives, back-office staff or field staff (like roads and parks crews).


*Figure 6: Connecting People Through Common Technology Systems*

Using common, integrated systems ensures that inquiries flow from front counters to departments and to appropriate field staff for resolution in the quickest and most effective manner possible.

Technology should provide management with the information it needs to support evidence-based decisions – helping to identify optimizations that drive service costs down (with improved efficiencies and reduced redundancies) and support cost avoidance. It should give Council the insights, performance indicators and long-term projections it needs to provide effective oversight to the administration.

## 4.2 Strategic Directions

The discussions through the Discovery phase indicated a strong interest in opportunities to significantly improve customer experiences through the implementation of digital technologies.

Management and staff across the Town voiced the need to digitize current manual, paper-based processes as well as modernize the tools they use daily. The Town's workforce should be fully empowered by technology, providing them with the ability to work remotely, use data to make better decisions and spend less time on administrative tasks that could be digitally automated.

The project objective was to develop "a vision for the effective use of technology to support the high-quality services performed by Town departments".

During a visioning session with the ITSC, various strategic goals were set. These goals can be summarized as:

***Making all services available in the way the end user prefers, that systems are stable, current and fully integrated providing improved access to data, information and knowledge***.

Systems are built so they are secure, stable, accessible and fully automated. The goal is for this IT Master Plan to build an overall digital architecture to ensure the Town's ability to leverage evolving and future technologies and provide seamless access to data (enabling improved decision-making) as well as enhance service delivery, efficiently and effectively.

At the core, this Plan is about delivering exceptional customer service and digital experiences for the Town's customers, Council and staff.

## 4.3 Links to the Service Delivery Review

The Town commissioned a comprehensive assessment of the operations in February 2021 to determine opportunities to deliver services more efficiently. The Service Delivery Review Report by Deloitte identified a

number of opportunities but key to addressing the changing demographics and needs of the community was the more effective use of technology and digital services.

The review identified the need to consider opportunities and strengthen service delivery. It identified four themes:

1. Continue the journey of digitization.
2. Align processes to maximize the effectiveness of technology.
3. Understand and document the level of service being provided by the Town today and in the future.
4. Encourage cross-department collaboration when making investments that relate to program outcomes.

The review also recommended that digitization investments should be made a top priority for the Town. One of the key success factors identified was the need for "organization-wide information-sharing, collaborative investment decisions and communication" to ensure modernization of services.

These factors align closely with the recommendations included in this Master Plan.

## 4.4 ITMP Programs of Work – Focus Areas

As previously noted, the Town has done well in building solid technological foundations that will be helpful in moving forward. The following areas represent the key programs of work (Focus Areas) that are aligned with the goals noted above. These programs frame the actions and the Implementation Plan recommendations.

### 4.4.1 IT Infrastructure – Modern, Secure, Resilient, and Interoperable

It is important to continue to invest and grow the technology infrastructure, providing secure access and reliable connectivity to business solutions and data. The technology environment must be well-managed in order to ensure resilience against threats and/or interruptions and to enable future flexibility and responsiveness.

- Address hardware, software, and data-sharing gaps by implementing realistic and best practice solutions.
- Identify and implement security measures to protect data, technology infrastructure and business continuity.
- Be flexible, agile, and responsive to new, emerging business needs.
- Prioritize IT talent recruitment, attraction, and retention.

### 4.4.2 Digital Customer Services

The Town should continue to offer all services across all channels – face-to-face, phone and digital – so those who don't wish to / cannot use digital channels, won't be forced to.

- Increase customer service satisfaction – 24/7, anywhere availability.
- Reduce overall service delivery cost – through self-service.
- Reduce pressures on back-office specialists.

### 4.4.3 Modernize and Automate Core Business Processes and Business Solutions

The Town is providing a diverse set of services to its customers. It is reasonable that a similarly diverse set of business solutions are required to manage these services.

The Town should review existing solutions capabilities before implementing or developing new systems. Such an approach will help reduce system sprawl and save time and cost of maintaining multiple business solutions.

To maximize the use of the existing business solutions, the Town should consider the following initiatives:

- Digitize manual processes, where possible, to improve customer service and streamline accessibility.
- Leverage existing systems – first determine if the existing system still meets the requirements (fit/gap analysis).
    - Roadmaps.
    - Clarify support, roles, and responsibilities.
- More meaningful work for staff.

### 4.4.4 Give People the Tools They Need to do the Job – Enable a Modern / Digital Workplace

Provide management and staff with the technology environment and tools necessary to carry out their work seamlessly, efficiently, and effectively – anywhere, anytime.

- Optimize operational efficiencies by minimizing data entry, process duplication and hard copy documentation – reduce barriers.
- Continue to realize hybrid working policies/strategies.

- Improve recruitment, attraction, and retention.
- Increase cross-team collaboration.
- Increase mobile working technologies to better enable field and remote workers to perform online and digital tasks with associated efficiencies built in.

### 4.4.5 Leverage the Full Power of GIS and Data

As the Town continues to grow its digital environment and digital understanding, it is important to build an organization that can leverage the full power of GIS solutions and data to improve services and to reduce service delivery costs.

- Shift to a data-driven culture with increased data literacy.
- Enable data-informed decision-making.
- Build aggregated data from different sources.
- Provide efficiencies and cost saving opportunities through the strategic use of data.

# 5.0 Focus Areas – Key Opportunities

Through the Discovery phase of the project, many opportunities were identified that required additional review and consideration. A high-level prioritization exercise was conducted with the ITSC to better understand technology priorities from a business perspective.

Project prioritization helps provide an objective approach and the opportunity to engage business units to better understand the demands with a corporate lens. It is recommended that project prioritization be incorporated into future technology governance and aligned with budget cycle and work planning.

Over 75 projects were included in the prioritization exercise including some projects from the Town's current IT project list. Not all projects identified through the review or on the existing list were included, as some projects were identified as being non-discretionary (such as server replacements) or having substantial completion.

Following the prioritization exercise, work was done to further evaluate the opportunities, balance and set the Work Plan.

The prioritized initiatives identified through the prioritization and Strategic Plan development include:

1. Customer Service Solution Implementation.
2. Service Requests and Work Orders.
3. Records Management.
4. Website Refresh.
5. CityView Review.
6. Online Payments Standardization.
7. CityView Mobile Interface.
8. HRIS.
9. WorkTech Review.
10. Asset Management.

The following sections identify many of the key projects that are included in the roadmap. The detailed roadmap can be found in Appendix 1. The projects have been categorized into focus areas.

## 5.1 IT Infrastructure – Modern, Secure, Resilient, and Interoperable

Technology infrastructure underpins almost everything that the Town does. This includes essential technical infrastructure such as email, voice, radio and data networks, servers, personal computers, business solutions and online services.

To date, the IT team has done a good job of building and managing this infrastructure. The staff survey indicates broad satisfaction with these core IT services, however, feedback also revealed increasing expectations from IT for even more services as well as a requirement for technology and tools that are not currently available at the Town (that have been implemented by other municipalities).

As the Town grows, "systems" are required to ensure that it is operating effectively. The focus of the Town should be ensuring that its business process and technology foundations are well-established and that continued investment in "IT foundational infrastructures" is made to ensure it operates effectively.

It is important to note the IT team has already started several of these projects (where possible, within the existing budget and approvals). The following key projects have been identified.

### 5.1.1 Network Hardware Management and Upgrades

It is important to continue to invest in the network infrastructure as well as user devices, ensuring systems are current, stable and secure. Funding needs to be available to ensure upgrades can occur on a timely basis. There are several production servers within outdated operating systems, or those approaching end-of-life (EOL). Some of these servers are supporting critical systems such as:

- Water SCADA Windows 2003 server – EOL 2015 (major risk).
- There are six additional production servers running Windows 2012 R2 which has an EOL date of January 2023.

A plan is required to migrate these systems to the latest Microsoft Operating System and/or to consolidate / decommission based on system requirement(s).

### 5.1.2 Connectivity Assessment (Broadband) and Cloud Planning

To continue its Cloud journey, the Town needs to have a clear understanding of its internet connectivity posture, including current bandwidth utilization trends and the ability to upgrade bandwidth connectivity in the future as the demand for high-speed connectivity continues to grow year-over-year.

Without visibility into these metrics, current plans to upgrade the network infrastructure and the need to migrate workloads to the Cloud, will present a significant risk to the organization.

The recommended approach for the Town includes:

- Procuring the services of a third-party firm with expertise to analyze the network and provide current utilization rates. This should include an assessment of the current and near future connectivity requirements, the ability of local carriers to provide this access, a feasibility study to determine if the Town should invest in their own connectivity and the ability for the Town to support the continued migration of workloads to the Cloud over the next 1-3 years.
- Developing a Cloud Computing Framework as a strategic artifact providing direction for a holistic view of Cloud adoption at the Town helping to define:
    - Town roles/responsibilities.
    - Cloud principles and procurement requirements.
    - When the Cloud may be suitable or not suitable (i.e., Cloud triggers).
    - Cloud security (e.g., data, third-party access, etc.).

Although Perry Group supports the move to Cloud, continuing the move without performing the above activities will present an unnecessary risk to current and future Cloud migration projects within the Town.

### 5.1.3 Communication and Collaboration Assessment

The legacy phone system is in need of a refresh; however, an assessment should be performed that includes the following activities:

- Conducting a corporate-wide survey to determine what features/capabilities the users require to deliver services, including assessing the need for desk phones, soft phones, smart devices, etc.

- Engaging an objective telephony expert (3-5 days) to help with the assessment and provide recommendations.

There are many options in the communications and collaboration space that further support the need to leverage third-party expertise.

### 5.1.4 Data Management (Archiving)

The proliferation of "stale" unstructured data is an issue in most organizations. The Town needs to assess all production servers to identify data no longer being used or rarely accessed. This data should be archived to lower-cost storage and no longer be in-scope for daily backups and future disaster recovery (DR) solutions.

A Cloud archive solution should be considered (e.g., cold storage).

Data Governance is a key component of data management – the practice of controlling how managed data is processed throughout an organization. A Data Governance Strategy for the Town will help answer questions like:

- Who has ownership of the data?
- Who can access what data?
- What security measures are in place to protect data and privacy?
- How much of our data is compliant with new regulations?
- Which data sources are approved to use?

However, IT looks at data from a tactical perspective, and the management of data typically falls within its purview. Often, a corporate Records Management Plan will identify data retention and archiving policies and procedures. It is important that the Records Management Plan considers digital records and data as well.

The recommended approach is to initiate data management activities is as follows:

- Perform a scan on production storage to identify stale/inactive and sensitive data as part of a capacity management exercise and continue to monitor storage growth (note: stale/inactive data is typically data that has not been accessed in 1+ years but should be defined accordingly for the Town).
- Develop an Archiving Strategy to move stale/inactive data to a low-cost offsite archive (Cloud) in conjunction with the corporate Records Management Plan. This process will lower the costs associated with production storage, data backups, and offsite replication (DR).

- Develop a Data Governance policy – this policy will define the overriding framework for data management.
- Develop a Data Classification Standard.

These activities will support an overarching Information Management Strategy as further discussed in the Enterprise Document and Records Management section below.

## 5.2 Digital Customer Services

### 5.2.1 Customer Service Solution

The Town is in the customer service business and its goal as a service provider is to provide easy-to-use, simple services.

In today's world, residents do their banking online as well as buy products and services online. They also expect to be able to access government services from their smartphone or their tablet, any time and from anywhere.

In the future, customers should be able to visit the Town's website via their smart device to easily and quickly:

- Report a problem and track its resolution (receiving updates along the way).
- Make a booking (e.g., recreation programs, facilities and rooms, inspections, events).
- Make a purchase (e.g., burn permits, property information requests).
- Make payments and manage accounts (e.g., pay an invoice, set up a direct deposit, review a tax account, request a tax certificate).
- Submit applications and drawings and track the application progress (e.g., Development Applications, Permits, Licenses, etc.).
- Submit forms (e.g., FOI requests, etc.).

Some of these services are available today, such as online recreation program registration, online bid management and streaming of Council meetings. The Town is committed to enhancing and expanding these service offerings.

It is reasonable to expect that, increasingly, the community will use digital services as the best and preferred way to interact with the Town. This doesn't take away from the important role of the face-to-face and telephone-based services currently offered. The Town will continue to offer choices to customers to interact using their channel of

choice. The expansion in digital services reflects the fact that expectations and uses are changing with a growing population who simply prefer to interact using the smartphone or the web and to enable real time access to service.

The Town has a significant project, approved in late 2022, to implement a new Customer Service Solution and this will be a priority for 2023. Customer expectations of government services continue to grow. Increasingly, people expect the same personalized and convenient access to local government services as they experience in the private sector and with other levels of government.

Research published by the Institute of Citizen-Centered Service (ICCS) indicates that, in today's increasingly connected and busy world, customers expect their local government to offer an array of choice that allows them to participate in government decision-making and avail themselves of municipal services in the ways that are most convenient for them.

A central objective of ICCS research is the determination of which drivers have the most impact on the customers' experience. Drivers are the variables in a customer's experience that have the greatest impact on satisfaction and therefore, they are the areas where focus and improved results can make the biggest difference.

Recent data indicates that finding a phone number for the service required – then being able to get through to that number – is an important component of improved service delivery. Further, citizens expect frontline staff to be knowledgeable and have the authority and information to resolve issues. Customers who contact the government by phone or website indicate that it often took longer than they expected to get information or start transactions.

For those who experience a problem with government service, issue resolution is logically a key driver, while confidence that any potential issues would be resolved is a key driver among those who did *not* experience a problem.

Other important drivers are:

- Going the extra mile.
- Being able to get timely help.
- Timeliness of the service overall, and
- Being able to get through on the telephone.

As demand for services increases and, as customer expectations grow, current approaches to service delivery and systems will not be able to deliver the level of service expected by residents, business owners, Members of Council, and other stakeholders.

It is, therefore, crucial to adopt tools, technology and approaches to service delivery to enhance access to service and to close any gaps. Centralized service delivery models, use of Customer Service Solutions, cross-corporate customer service philosophies and standards of service delivery, will help deliver an exceptional customer experience to the citizens of Collingwood regardless of the channel they choose.

### 5.2.2 Implementation of the Customer Service Solution

Collingwood has recently announced that it has selected the vendor and product for a municipal Customer Service Solution. This is an exciting project that has the potential to significantly enhance the customer experience as well as streamlining processes for further efficiencies.

The implementation of a Customer Service Solution is typically "customer first" philosophy – how can we enable our customers to best interact with the Town and satisfy their needs as quickly and transparently as possible?

It is important to understand that, depending on the type of the services:

- The majority of customer requests could be managed entirely within the Customer Service Solution – from intake until resolution – and the entire workflow could reside within the Solution.
- Other service types could have information entered in the Customer Service Solution which is passed into specialized back-office systems to process; some information could return from the back-office systems to the Solution.
- Other services might rely on a back-office solution that has an enhanced customer portal, where the common customer information is passed from the Customer Service Solution to the back-office portal and the customer primarily interacts with the back-end portal to fulfill their request.
- Some types of services may be highly specialized or very infrequent and not be tracked in the customer service tracking system at all. These services could remain within the current departmental business systems.

The implementation of services within a Customer Service Solution (from an online perspective), should follow this recommended prioritization:

- Start with simple or common, high-volume and repeatable services or business processes to encourage the customer to transition to online service methods (these services will typically only require basic information from the customer).

- Take advantage of the efficiencies of downstream systems that have robust customer portals, using integration to seamlessly authenticate using the credentials within the Customer Service Solution and passing data back and forth (where required) between the systems to streamline the customer interaction and need for data entry and file submission.
- As service complexity expands, additional information may need to be provided by the customer to increase access to more services (e.g., providing a roll number to access tax / payment information and then the system vets to ensure the customer name matches the owner name on the tax record, before access is granted).

To achieve the full benefits of a digital service, the Customer Service Solution should be integrated with the back-office systems that are in use today. Most Customer Service Solutions offer this capability.

Ideally, the Solution would seamlessly pass the customer authentication and common information from the customer record to the back-office business solution for the collection of service-specific information by that application. When a back-office solution does not have a modern or functional portal environment, the Customer Service Solution will take responsibility for the data collection and verification, and seamlessly build the transactions that the staff would use without exposing the downstream interface to the customer.

In both instances, the customer should only need to access the Customer Service Solution and it should manage the seamless integration, customer authentication, data and current status display.

Collingwood is fortunate. CityView, PerfectMind, Great Plains, Esri ArcGIS, Microsoft Suite and SharePoint are very common, and have most likely been integrated for other organizations.

In order for the implementation to progress in an orderly and managed fashion, there are many standards and agreements that need to be developed and followed as the implementation progresses. Some of these are:

- Product standardization for types of services, i.e., all permit and license applications will be managed by CityView.
- Web style and template standards, with a goal to configure the Collingwood website, Customer Service Solution portal and downstream business application portals to appear and interact as similarly as possible.
- Customer consents – a Collingwood Standard Consent Statement must be developed to enable data and information to be used by the Town as a whole, with few exemptions for specific departments.
- Customer subscribe / unsubscribe capability to allow for customer self-service.

- Data element responsibility and ownership (i.e., what customer data elements are common and are to be shared across all applications, what data elements are specific to individual business services, etc.).
- Communications Service Standards for email, telephone, online service responses and updates.
- Service expectations by service type to be communicated to the customer.
- Service Level Agreements between the customer service department and each business unit (bi-directional).
- Escalation processes for customer complaints, service level deviations, etc.

### 5.2.3 Approach to Customer Service Solution Selection

It is not uncommon for there to be competing approaches to the technology selection, e.g., priorities of what should be accomplished, personal views of the individual business departments, personal views of the vendor or the vendor's implementation team, departmental staff resistant to change, budget constraints or timing constraints, etc.

Typically, there is a mix of unknowns and misinformation between the Town and the Customer Service Solution vendor / implementation team. Often, during the RFP and negotiations process, assumptions are made, and concepts are discussed, but shortly after the project starts – through discussions between the vendor and Town staff and through learning more about the system and its capabilities – different options become evident.

It is a common recommendation that the municipality implementing the solution have a relatively technical person on the solution evaluation team who is focused on keeping the municipality's best interests as top priority (such as, best practices, a common and repeatable interface, process steps based on the needs of the customer, etc.).

This technical resource can challenge the vendor about why certain choices are being made and what other choices are available. For instance:

- Some Customer Service Solution vendors are reluctant to integrate with municipal GIS systems – most often the vendor can integrate, but it is not their preference.
- Some municipalities may have technology or data standards that are not the default configuration of the vendor, i.e., all file attachments, documents submitted, pictures, etc. are to be stored in the corporate Document Management System (e.g., SharePoint, Laserfiche, etc.). The vendor may suggest that their standard is for file storage within *their* environment, but the larger concern is that the Customer Service Solution becomes a competing new silo of data for corporate information.

- The technical resource can also push back to the departments who may resist the inclusion of their business process or the linkage of their business applications or customer contact information into the Corporate Customer Service Solution or want to have the vendor configure non-standard business processes.
- The technical resource would also be beneficial if they had a business process and analysis background and could act as an intermediary and help in the communication and translation of business needs, desires and impacts for the responsible service group, the department actioning or running the business process being automated or migrated to online, the project steering committee and often to the Senior Management Team.
- The technical resource role has the organization's perspective in mind, so has the flexibility to ask tough questions of the business units (e.g., why they do certain things that might not be optimal to the overall goals, practices and customer experience of the customer service initiative). Similarly, the technical resource would also ask questions of the vendor or implementation team about the options, technical directions, business choices or limitations being recommended by the vendor that may not be optimal to the municipality's overall goals.
- The role also needs to understand the balance of needs, wants, time, staff and vendor resources, and budget. Through project management reporting and decision-making, this role might recommend changes in what services are implemented when and how, what technology options should be considered that might decrease or increase the overall cost but is in the best interest of the organization, etc.
- This resource would report to the Customer Service Solution implementation team management and to the steering committee and be able to provide an unbiased corporate perspective to the overall solution.

Understandably, business process review, back-office integrations, data and customer experience standards creation, etc. are very active in the early stages of the project and as decisions are made and policies and practices are established, the technical resource role's interactions become less, and the role is used when something non-standard or contentious arises.

In larger organizations, a Senior Business Analyst or Senior Project Manager with business process experience is often allocated from staff complement or hired on a multi-year contract to fulfill this technical resource role.

Smaller organizations may hire a third party with specific experience to perform this role and protect the organization's best interests. Typically, these types of contracts are structured around a maximum number of hours per week or per month for the life of the project or until the project is mature enough to continue by itself. Further

information on properly resourcing technology solutions and implementations is included in Section 6.0 Building the Framework for Success.

### 5.2.4 Online Payments Standardization

The move to more online services has emphasized the importance of making it simpler and easier to pay all Town bills, invoices, and fees online. There are currently several different ways to make online payments, depending on the service that is being accessed.

To achieve consistency, the Town (through the ITSC) should set a corporate policy position on digital payments and implement simple, reusable payment solutions that can be integrated into all Town services to accept all payment types.

A key measure of success will be the number of services for which digital payments are available and the uptake of digital payment options. Experience in other municipalities suggests that uptake will be significant.

## 5.3 Modernize and Automate Core Business Processes and Business Solutions

### 5.3.1 Business Process Reviews

Collingwood has done an excellent job in providing many online opportunities for customer interactions. The next logical step – before more digitization and automation – is to shift attention toward process optimization.

By looking at a process end-to-end, optimizing it by removing non-value-add steps and standardizing it by taking advantage of best practices, the Town will be in a better position to digitize processes that will allow both internal employees and external customers to benefit from the improvements.

Digitizing back-end business processes improves public service design and delivery efficiency, effectiveness, and governance. The focus of the Town should be on ensuring that its back-end business processes and supporting systems are well-established. Building these efficient, effective, and well-governed business processes and supporting systems now, will ensure that the Town can:

- Contain its operational costs as it grows and reduce the overall cost of service delivery.
- Free its staff from doing mundane tasks and do higher value-add work and more easily adapt to new priorities, and

- Make well-informed decisions shaped by and responsive to internal and external customers' needs.

A business process defines the sequential steps that are required to provide a service. Often, business processes are cross-functional, meaning they touch many internal departments. It is important to note that, prior to digitizing a business process, the Town should review the current process and optimize it.

Two of the common practices used for process optimization are Lean Six Sigma and Business Process Re-Engineering. When a business process is defined, a clear start and end point must be identified, e.g., making a payment is not a process – it is an activity within a larger process.

An example of an end-to-end business process would be a customer requesting a marriage license to the point where the license is provided to the customer. This process includes filling in a form with all the required information, making the payment, providing the proof of identity to the point where a printed provincial license is provided to the customer.

A fully digitized marriage license process would look like:

- A customer visits the Collingwood website and searches for "marriage license".
- The customer is taken to a webpage that explains the steps required to obtain a marriage license.
    - The prerequisites, payment amount, identification requirements, mandatory information needed in the form, how long it takes, how to pick it up, etc. are all available on the webpage.
- When the customer is ready to apply, they fill an online application form with all the information required to process the application, attach digital copies of identification, make an online payment using a credit card and submit the application.
- The system performs a mandatory data check to ensure that all required information fields are complete.
- The website provides a reference number and a receipt for the payment via email.
- A link is provided to check the status of the application.
- The payment is deposited to the Town's bank account automatically.
- In the Clerk's department, the administrative staff receive a digital alert about the new request.
- Clerk's staff review the application and approve to proceed.
- The Clerk is alerted through a digital workflow.

- The Clerk reviews the application and adds any changes and, with the click of a button, creates and prints the marriage license onto the provincial form.
- The digital workflow emails a digital copy of the license to the customer and the physical marriage license is mailed to the customer.
- The system tracks the license number and the details of the applicant for future processing.

The above example shows how a business process could be digitized from start to end. Some tangible benefits of such a digitized process are summarized below:

- Increased process efficiency (systems vs. humans perform repetitive complex functions).
- Less manual work for internal staff.
- Staff time is saved providing additional capacity and cost avoidance.
- Quick turnaround due to increased process efficiency.
- Data tracking is available due to end-to-end digitized processing, e.g., the ability to track how long it takes for administrative staff to review and confirm a request, ability to benchmark the cycle time from the submission of the application to the issuance of the license, etc.

Process digitizing projects should include Business Process Optimization (BPO) embedded as a requirement. Digitizing existing paper-based processes will ignore the inefficiencies built into the process over the years. A BPO exercise will clean up the duplicate and non-value-adding activities in the process while utilizing the digital capabilities to improve efficiency of the process.

### 5.3.2 Business Solutions

Business Solutions are the tools used every day to get the job done, for example, issue tax bills or permits, issue invoices, pay bills, run payroll, manage recreation programs.

The Town has several legacy enterprise and expert systems that are not being fully leveraged. It is critical that these systems are well-utilized in the future as they are the foundation for customer-facing digital services, increased information analytics on service delivery as well as expansion of field/remote work. For example, the CityView solution could be more fully leveraged to provide better access in the field, better integration with GIS and other tools and enhanced portal capabilities.

There are several best-of-breed solutions in place so maximizing these existing technologies will be key to fully realizing the benefits.

The following major Business Solutions should be addressed:

- **Financial System Review** – The Town has been using Great Plains (GP) for a number of years. It is a comprehensive solution, but there has been a struggle with vendor support in the past. People and money processes are core processes that form the backbone of any organization, so it is crucial that the municipality's financial solution fit the needs of the organization. A review should be conducted to determine if GP still meets the needs of the Town and to determine what enhancement(s) should be considered. A longer-term roadmap should be developed. This review should include financial systems as well as the payroll system.
- **Human Resources Information System** (HRIS) – One of the Town's most important assets are its people; they also represent one of the largest costs, so it is critical to effectively manage the workforce from onboarding to retirement using digital processes rather than paper-based employee files. A comprehensive HR management system is a corporate-wide solution, not simply a "system for HR", and thus must meet the needs of the whole organization (leadership, management, staff (part-time, full-time)). This review should identify the modules required such as a single and centralized repository of employee master data, self-service functionality, online recruitment, leave and disability management, etc. Other considerations would include time and attendance tracking, learning management and Payroll if not to be part of the Financial System Review. Time and attendance should not become an equally weighted deciding factor for this solution since other opportunities are to be assessed.
- **CityView** – Planning and Building are the primary users of CityView, and Public Works would like to use it for their service requests, but resource capacity, consulting bandwidth and application priority-setting is causing delays. A review should be conducted to identify how to expand the use of CityView to fully digitize the planning, building, permitting, licensing and enforcement processes. Consideration should be given to a solution for more sustainable support for this key solution.
- **Asset and Work Management** – A review should be conducted of the suitability and potential replacement of WorkTech for asset and work order management. WorkTech is currently used to manage work orders and time tracking as well as to inform Payroll (Great Plains).
- **Direct System Integrations** – With the new Customer Service Solution being implemented, there will be a need for more direct integrations with the existing Esri GIS, CityView, Asset Management, Work Order Management, Time and Attendance and Great Plains Financial systems.

- **Collaboration** – There is a need for improvement in the opportunities for online collaborative workspaces such as Teams and document management (possibly with SharePoint).
- **Utility Billing** – There is a potential for water billing to be brought back in-house. As this project is pursued, it should be reviewed through the lens of this new ITMP. It should include having online access for customers to view and self-manage their services and to monitor usage and set up their own billing arrangements.

It is imperative that foundational systems be updated and fully utilized before moving to more enhanced digital services. Enhanced digital service apps or online services require the back-end solution to be in place to enable proper integration. This will greatly reduce data duplication, redundancies, duplication of effort and data entry.

As the Town increasingly digitizes its processes and uses business solutions to manage its workflows and work assignments, it will collect more data about the services it provides, the way staff work, the impact of policy decisions, etc. As a result, Council and staff will use data to make decisions that help optimize resource use and reduce service delivery costs and complexity.

## 5.4 Enable a Modern / Digital Workplace

Just as a FedEx® or UPS® driver uses a mobile device to track delivery of your parcel and get your signature, Town staff who work out of the office should have access to similar technologies to collect data, track work orders, complete inspections, access asset history, view drawings and conduct surveys.

Mobile will be central to the realization of the full benefits of CityView, GIS and Microsoft Office products and using mobile technologies (including connectivity and security, devices and business solutions) to access Town information while on the go will be key for staff – from Building, Parks, and Public Works staff to staff who will continue to work from home.

Mobile technologies will allow a customer request (about a downed sign, for instance) to be directed to a field crew almost immediately and then the progress and completion can be tracked by back-and front-office staff.

If the Town is to be a more modern, digital organization, then it must also make available simple and easy collaboration capabilities for staff – enabling staff to do their best work by using the tools best suited to the job. This will include:

- Increased use of mobile-friendly devices – laptops, tablets – providing individuals and teams with choices of devices that best meet their job function within approved corporate standards.

- Improved internal online services such as attendance, time management, internal forms, etc.
- Team messaging, chat, and a more robust intranet – helping co-workers connect and interact in real-time.
- Improved document collaboration, versioning, co-editing, and simplified processes to comply with accessibility requirements.
- Increased capacity for remote and flexible working – enabling staff to work from the office, field work from the side of the road, in parks and the community, or work from personal remote locations.

Importantly, the Town's culture must embrace these technologies and the workforce must be trained and comfortable using the technologies, making it commonplace to take advantage of them.

### 5.4.1 Develop a Mobile Strategy

Mobile working is a major opportunity for the Town, however, current state connectivity to cellular networks does present a challenge. Regardless, it is hoped that, with the persistence of local advocacy groups and release of grant and subsidy programs, this will improve over time.

If slower than currently anticipated, there are a number of options that may not provide "always on" connectivity but do provide opportunities to "sync and go". Some of these are currently being utilized by the Town (e.g., By-law, GIS collector apps, etc.).

In short, digitizing fieldwork to the greatest degree possible, creates major efficiencies and should continue to be prepared and planned for. This is even more important as the current CityView implementation will create a wide range of mobile-enabled services that could be enabled.

A strategic approach is required to assessing mobility with success and is dependent upon various factors:

- Requirements – Informed by frontline staff, the real users of the systems (not managers as proxy).
- Business Processes – Clear, well-understood business processes, journey mapped and re-designed for a mobile-enabled workforce.
- Business Solutions – Solutions designed to be user friendly in the field by mobile workers, enabling digital, real-time workflows, access to information needed, etc. and fully meets the needs of the user.
- Security – Realistic, easy-to-use ability to have a secure, reliable connection (e.g., robust mobile-VPN, single sign on).

- Devices – Suitable devices to work in the environments staff are actually working in (e.g., temp ranges, glove-wearing, sun-glare, battery life, usability, business solutions available on the platform, etc.).
- Support – Defined model for mobile support (e.g., spares for swap out, availability when support is needed, (e.g., before and after regular hours)).
- Management – Commitment to effective change management.
- Education and training – Building capabilities and ensuring people use the tools in the correct way.
- Compliance – Monitoring and assistance from management to ensure that team members are using the solutions as designed and intended.
- Enforcement – Business management must hold staff accountable for using the solutions.

Mobility also relates to the solution required to manage remote devices. A Mobile Device Management (MDM) solution is a definite need to more efficiently support the various mobility tools deployed currently, but most importantly, safeguard potential data loss. A Mobility Strategy for the management of mobile devices would include a formal policy supported by an appropriate tool. It should be noted that the Town is considering Intune for MDM. Although this is a solution rated well within the industry, a Strategy should be developed *prior* to the purchase of any tools or solutions.

IT should create a project to assess mobility requirements and develop a corporate Mobility Strategy. This Strategy should document the current state and anticipate mobility requirements over the following 3-5 years.

An assessment should be a collaborative effort working with all departments to understand how field work could be enhanced through mobile connectivity to corporate applications and other Cloud tools. Consideration should also be given to centralizing procurement and management of mobility within IT and use of an MDM solution.

### 5.4.2 Microsoft 365

The Town has made a commitment to the Microsoft 365 Cloud-powered productivity platform and, as such, needs to develop a roadmap that will leverage current tools being used by the Town (email, Teams) while providing a launchpad for additional capabilities around collaboration and document management (e.g., SharePoint and OneDrive) and security (e.g., M365 security suite).

It's worth noting that Microsoft continues to advance this platform (initially launched in 2011) and expects to release a wide range of tools that may include chatbot technology in 2023/24 (such as ChatGPT).

Although these are fluid expectations, we can fully anticipate that the M365 platform will continue its momentum over the coming years.

Recommendations toward this end include:

- Setting the strategy and architecture and rapidly implementing Microsoft 365 as the corporate collaboration platform, with:
  - Outlook for email, calendar, and bookings.
  - Teams for team and partner collaboration, one-on-one and group chat, and discussions.
  - OneNote for personal and shared note-taking and personal knowledge management.
  - MS 365 Productivity Suite – Word, PowerPoint, Excel – including mobile device, web browser access and collaborative real-time editing.
  - SharePoint to replace the internal portal, for file storage, document collaboration, large file sharing and transfer with partners.
  - To Do and Planner for personal and team task management and Kanban boards.
- Consider SharePoint as a means to corporate records management when developing a corporate document and information management strategy. See Section Enterprise Document and Records Management below.
- Identifying and promoting the availability of recommended "new" collaboration and facilitation tools suitable for hybrid work (and certified for use) and the skills to use them, including:
  - Online whiteboards.
  - Ideation.
  - Creative and project team tools.

### 5.4.3 Enterprise Document and Records Management

The Town must modernize its corporate records management (classification, retention, destruction) approach and align its paper and electronic records management practices. The Town has considered records management systems several times in the past. During the Discovery phase, staff consistently noted the challenges with finding documents, file storage and collaborating on files.

While technology will be an important part of making it easier and simpler to find, access and retain critical content, the right strategy, policies, practices and protocols must be in place before implementation to ensure that the Town sets up the environment correctly.

As a result, the Town should consider the development of a corporate Information Management Strategy that will review the Town's current information management practices, identify gaps and opportunities, evaluate solution options and provide a clear roadmap and Implementation Plan for implementing electronic records management and for improving records management practices. This Strategy should be led by the Clerks Department as they are responsible for corporate records, however working closely with IT to ensure digital records (both structured and unstructured) are included as well as an alignment with technical solutions to manage.

Once the Strategy is set, the Town will proceed to implement a corporate document and records management system, re-using, where possible, existing technologies such as Microsoft SharePoint and OneDrive.

### 5.4.4 Document Lifecycle

Documentation and record keeping is not just necessary but essential to the work that employees do. However, the current process of creating, reviewing and approving documents results in the creation of multiple copies of the same document in different network locations, multiple email attachments on the same document, and multiple marked-up printed versions of the same document.

During the Covid lockdowns, many organizations transitioned from staff being in the office five days a week, to having staff work remotely and using online collaboration technologies such as Microsoft Teams and Microsoft SharePoint.

Staff similarly started to take advantage of the Town's collaborative infrastructure by sharing and editing common documents as works in progress to generate final corporate reports. Although this collaborative interaction works well for content creation, the Clerks department is responsible for the Official Corporate Reports which are the final "one source of truth".

Many business solutions used within the Town also have the ability to accept, process, modify, annotate and generate documents. Currently, there is not a standard definition of where documents should be stored, how versions should be maintained, what the retention policy is for different documents, etc. Some documents can be deleted / purged in five years, some 10 years and some documents need to be kept forever. What type of format should be used to make the files readable in the future? Is there a corporate or customer service perspective for the keeping of some documents? A common example is property surveys – various policies may suggest that they can be purged after 10 years, but from a customer service or historical perspective, why not keep them forever?

Departmental staff expressed frustration with the inability to find the documents they were looking for easily and quickly because documents are stored in various systems and file repositories are not easily indexable and searchable. Ideally, with suitable security permissions, a staff member could search on 123 Apple Street, and be linked to property information, building permits, tax certificates, owner information, tenant information, utilities, etc. Without data and document policies and standards, the problems experienced today will only grow exponentially in the future.

Municipalities need Data Governance (policies, standards, decision-making) to help standardize processes and improve data management practices and realize the value of data capabilities at an enterprise level. For both spatial and non-spatial data, Collingwood will need to develop a Data Management Plan that would provide data standards, classification, and sources of "master" data.

## 5.5 Leverage the Full Power of GIS and Data

Leading organizations use data to make decisions about optimizing services and simplifying how they work. They utilize data insights to focus their resources on the most critical work.

It is important to build a data-savvy culture that leverages the full power of data and GIS as a critical tool, to improve services and reduce service delivery costs.

To use data for such decision-making, it must be reliable, accurate and timely. Integration of systems is a key component in optimizing services through data. Collingwood has multiple enterprise and expert systems; however, these systems are not always integrated, or the existing integrations are not two-way. There are further opportunities to increase online map inquiries and self-service for both residents and staff.

Well-integrated business solutions can effectively and seamlessly interoperate and share data automatically between systems. This reduces data duplication and errors and ensures auditability as well as enables data analysis and reporting. On the other hand, without integration, the data/information remains locked within individual application silos and results in increased administration costs to reconcile data in those individual applications.

As Collingwood gets better at utilizing its business solutions and as it continues to add new systems, it is highly recommended to build 2-way seamless integrations between these systems.

### 5.5.1 The Importance of GIS – Location-Based Services

The Town is beginning to utilize GIS and geospatial solutions more than ever before. There is a growing need for location-based services and geospatial insights that help organizations make data-informed decisions, create

operational efficiencies, and provide situational awareness. Various departments are finding out how effective geospatial solutions and data can be to help operate programs and deliver services. The ITMP project did not include a detailed analysis of the geospatial program at the Town although a high-level review was conducted as GIS is considered a critical corporate asset.

Simcoe County has an Esri Enterprise License Agreement (ELA), which provides a shared usage agreement for local municipalities. The County's primary focus with their own GIS offering is on opengis.simcoe.ca which provides online mapping and raw data extracts for users.

Various features are available via a secure login for Simcoe municipalities, including Collingwood. The shared use agreement provides the Town with excellent value for use of this tool; however, the largest obstacle is that there is insufficient capacity at the Town to fully utilize the solution's features. Such capacity was sought when hiring a GIS Specialist, however, this role has almost entirely been focused on GIS support and some development with limited capacity for strategic planning, goal-setting or moving toward more spatial analytics.

There is a solid foundation of geospatial capabilities established but there is still significant opportunity to build on spatial data and develop more self-serve channels so business departments can utilize geospatial solutions to increase productivity, planning, fieldworker mobility, and further streamline operations.

### *Key GIS Recommendations*

- Develop a GIS Strategy.
- Transition basic mapping and spatial analysis functions to the business, where appropriate.
- Establish a Community of Practice to drive the adoption of standards and technology.
- Establish a Geospatial Data Governance Framework to improve the integrity of the Town's spatial data.
- Implement a geospatial services catalogue that describes the GIS solutions and service options available.
- Leverage web GIS capabilities and solution templates to quickly enable new geo-capabilities and control technical diversity.
- Integrate geospatial solutions with other core business systems and data to use GIS as a system of insight.
- Next Generation 911 Readiness.

### *GIS Strategy*

GIS provides an excellent opportunity to start building integrations and be a central data management point. In general, GIS has been built aligned with best practices and is used by some staff as a critical part of their toolset, but it is noted there is no overall GIS Strategy. A Strategy would consider how GIS can benefit both internal staff and external citizens and businesses.

Since the majority of municipal data is spatial, such a Strategy would help in embedding GIS / spatial and data understanding into many municipal processes including defining future (potential) integrations. It is an ideal way to begin to understand the value of a well-managed data program.

It can be expected that a GIS Strategy would further expand the use of GIS at the Town. To reduce confusion, avoid duplication and enhance customer service, GIS needs to have two-way integrations between GIS and other core systems such as CityView, Digsmart and the new Customer Service Solution.

The detailed review would further identify resource requirements to fully leverage GIS capabilities and capacity in Collingwood. It would identify key GIS resources needed within the IT/GIS team as well as within the various departments. For the immediate requirements, it is recommended that an additional GIS Technician be added to the IT Staff complement. Refer to the section titled The IT Team – Building on Strong Foundations.

The GIS Strategy should also create a catalogue of existing geospatial solutions and services that are available.

Considerations to establish a governance framework around the GIS program (similar to the IT Steering Committee) should be evaluated. This specialized governance team will have a focus to help establish and communicate overall spatial data management practices and will help Collingwood realize the full potential of GIS data and solutions at an enterprise level.

### *Transition Basic Mapping and Spatial Analysis Functions to the Business*

Modern geospatial technology solutions are designed to empower business-level users to conduct analysis through self-service features and access to data that can be accessed through GIS tools.

As a method to move basic GIS requests from the workload of the GIS Specialist, it is recommended to extend access to web-based mapping applications to specific business areas that can utilize GIS capabilities to improve productivity and optimize their workflows.

Business users can use online geospatial solutions to bring data from many sources. These sources may include spreadsheets, images and geospatial files. Business users can then integrate their data to:

- Understand the physical location of the Town's assets and resources.
- Determine the size, shape and distribution of assets and related business interests.
- Optimize siting and routing decisions.

The transition of basic mapping and spatial analysis functions to the business is designed to eliminate reliance on manual support from the GIS Specialist and empower a community of business users to utilize mapping solutions themselves.

Business users would require initial training on common web-based mapping application functions and would be expected to work in accordance with the central team's direction and supervision.

An option to be considered is the development of a central portal or to implement a main intranet page that provides access to all available geospatial services and solutions. This may help to improve awareness and access to geospatial maps, apps and data.

This portal would enable users to access content and self-serve channels for all geospatial services which is essential to drive the broad adoption of geospatial capabilities. Leveraging the portal, GIS can share to all staff a wide range of geographic content, including maps, apps, and data.

This central portal can also provide training opportunities and standards or policies that outline the expectations of users working with geospatial data.

### *Establish a Geospatial Community of Practice*

To drive the adoption of GIS standards, process, and technology, it is recommended that the Town form a Geospatial Community of Practice (CoP) or user group. The group is a forum where people using GIS services and tools on a regular basis can get together to share knowledge, collaborate on issues and develop resources for everyone to use.

It is recommended that the Geospatial CoP meet on a quarterly basis. The CoP chair (likely the GIS Specialist) would convene additional ad hoc meetings when necessary, requesting topics, issues and reports for inclusion in the agenda. The chair coordinates decision-making on action items and recommendations provided by other business teams and working committees.

Specifically, the recommended responsibilities of the Geospatial CoP would be to:

- Work to improve and advance GIS capabilities and adoption.
- Review proposed GIS initiatives and recommend priorities accordingly.
- Propose resolutions to organizational conflicts that emerge related to GIS initiatives or standards.
- Monitor the effectiveness of implemented geospatial standards and practices.
- Share knowledge of geospatial practices and processes.

### *Integrate Geospatial Solutions with Other Core Business Solutions*

Modern geospatial environments are key integration tools enabling different departments to work together and share content through trusted and secure workflows.

There are opportunities to further leverage GIS to integrate data between key business solutions such as CityView, Great Plains and the new Customer Service Solution.

By identifying these integration opportunities early, and then implementing a collaboration process with the supporting technology, the Town will be able to more effectively leverage data, foster engagement and communication, and gain insights from the data.

Technical integration lets you deliver solutions that combine data and tools from disparate systems (including GIS), and business solutions. With fully-integrated solutions, cross-functional business processes can be improved and provide decision-makers with integrated views of your organization's information.

### *Next Generation 911 Readiness*

Several projects have been identified in the roadmap to address the above objectives for GIS and geospatial solutions.

A challenge for every municipality is the expected move toward the Next Generation 911 system. The Town will need to evaluate the current state of 911-related data, processes, governance and technology to identify areas of improvement in order to meet future NG 911 requirements.

The potential project may result in a comprehensive report that outlines current state findings and a set of recommendations to address areas of concern as NG 911 protocols are established. It will be necessary to identify the scope and scale of requirements necessary to meet the National Emergency Number Association (NENA) standard. Likely the Town will work alongside the County and other neighbouring municipalities in this initiative, but it is noted here as a possibly significant task, specifically for the GIS Specialist.

### 5.5.2 Data and Analytics

Data collected by a municipality provides value not only to the administration and operations but also can be very valuable to the community. Data helps us analyze our current situation, refine our goals, improve our policies, and stay on track with goals. Most importantly, municipal data can help us identify and understand root-cause, mitigate and (maybe) resolve our community, our climate, our environmental issues.

Data is strategically important to the Town of Collingwood. It provides insight into what is happening in the Town and helps translate that insight into effective services and even better business operations.

The volume of data has risen exponentially in recent years. This trend is expected to continue as the Town considers using sensors (for tracking work vehicles, traffic management, pedestrian flow data, emissions capture, etc.) and ‘smart’ applications that generate real-time data with workflows that are built in back-end solutions, with an increasing need for image materials such as photos and videos.

Data forms the basis of information and knowledge as illustrated below:

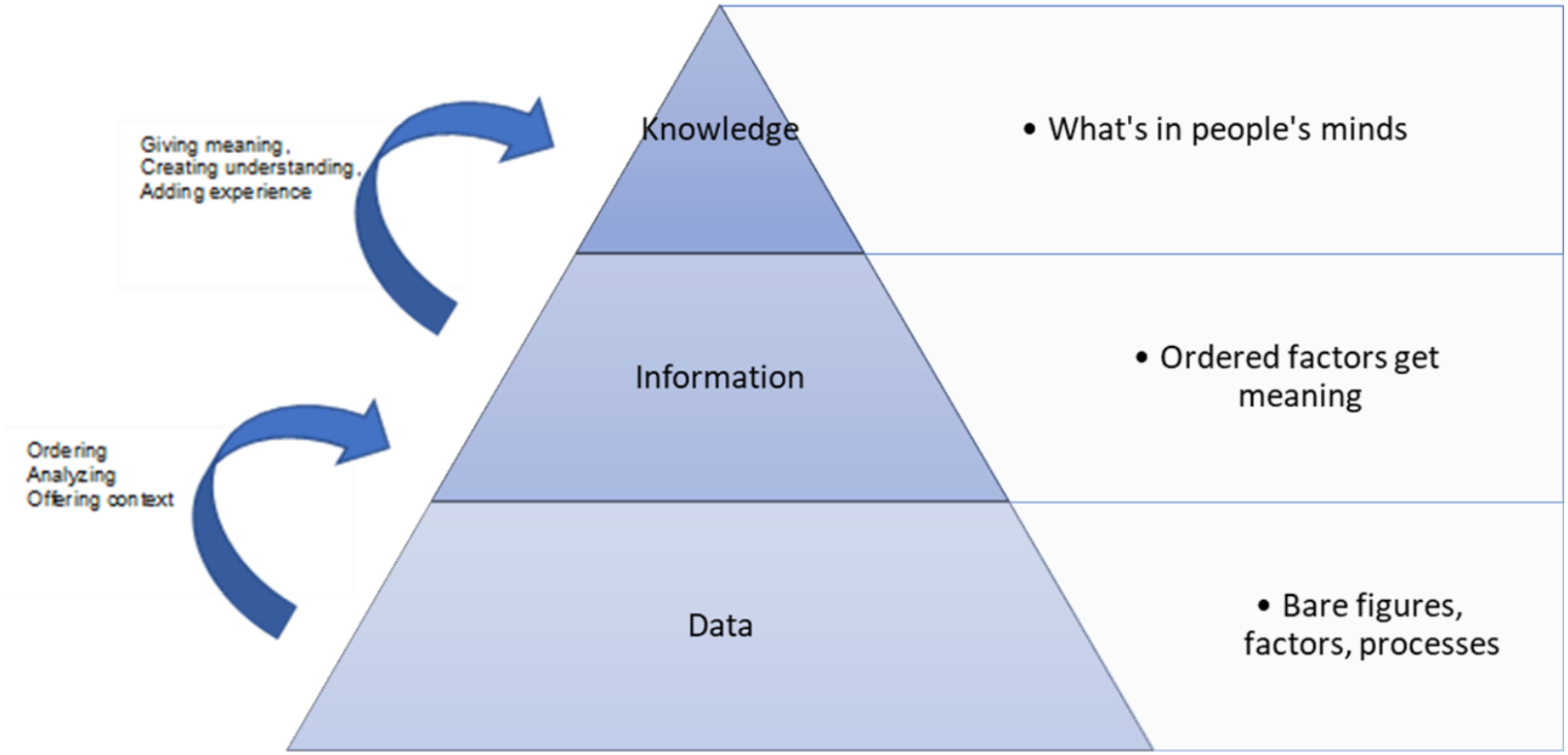



*Figure 7: Value of Data*

A data-driven smart municipality is one where decision-making and management are based on facts, figures, and sensory observations rather than on prior biases or unfounded opinions.

Data-driven smart municipalities have two key objectives:

1. Using data creates value for the Town. It shows which community, environment, climate, and other societal issues need to be resolved and how the residents, visitors, businesses, and partners can benefit. For example, data can provide insights into population and environment thereby improving assets and services.

2. Data can only create value if it is based on a sustainable data organization. Such an organization is defined as one that allows collection and analysis of reliable, current, and relevant data. This is achieved by fulfilling certain pre-conditions as illustrated below.

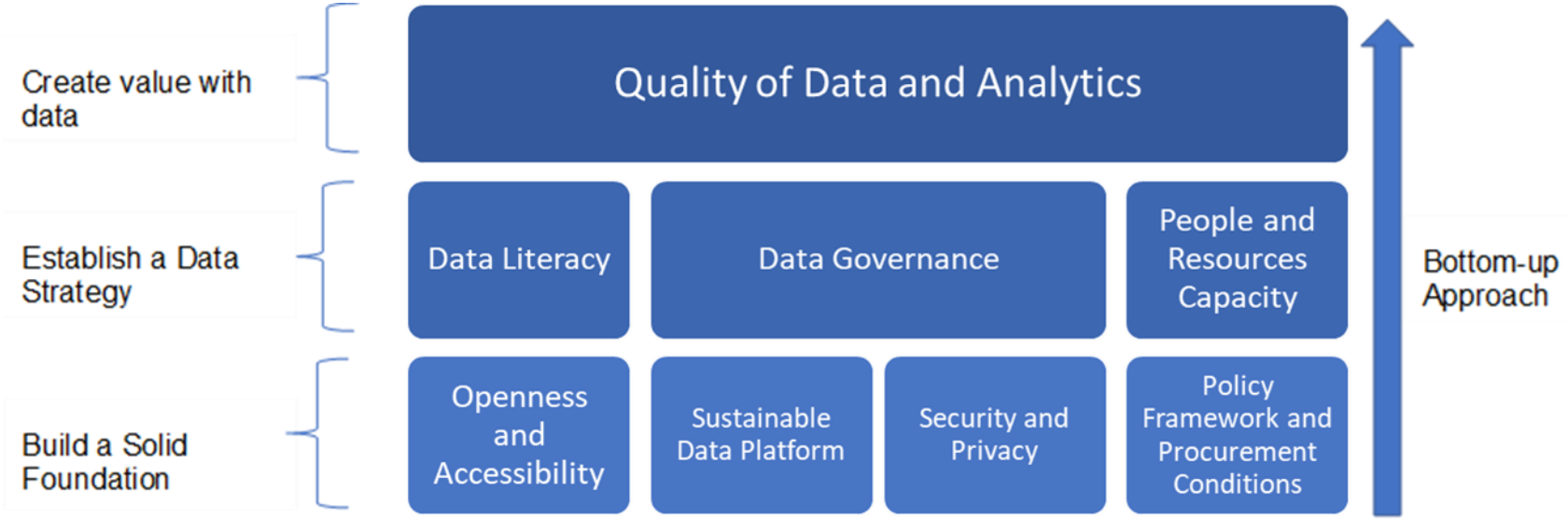



*Figure 8: Pre-Conditions of Data Organization*

Bottom Level – Solid Foundation – An organization can only start to derive value from data that can help improve services if there is an investment in a sustainable data platform – a landing place for all municipal data. A secure analytics environment should be established in which privacy and security are a priority. There is a need to develop clear data policy frameworks and procurement conditions for employees, so they know how data is managed and kept secure.

Middle Level – Data Strategy – In the next level up, the Town can start to build the knowledge and skills required to obtain insights from data and information products and to use data consciously and responsibly. This requires building in-house resource capacity as well as working closely with others in the ecosystem: neighbouring municipalities, nearby educational institutions, and local businesses. Another important aspect at this level is Data Governance, i.e., establishing and clearly allocating the responsibilities related to data use / management. Working together within the Town and within the ecosystem will allow value to be derived from data.

Top Level – Data as a Currency – Finally, an organization must invest in improving the quality of data so that the data is findable, accessible, and reliable. Wherever possible, work is based on Open Data and open standards. (For reference, Ontario's Digital and Data Directive, 2021 | Ontario.ca Also, investment is made in increasing the professionalism of analytics using standardized data models, metadata, and a municipal data catalogue.

Building these layers from the bottom up will help the Town become a data-driven smart organization that is using data to understand and tackle key issues such as environmental, societal, climate (to name just a few). The Town must also determine what its data priorities are – which datasets need work, and which are the highest priority because of their broad use across the organization (e.g., employees, assets, addresses, GL codes).

As the Town becomes more mature in how it uses data to respond faster to changes in legislation, environment, demographics and so on, it will move from being data-reactive to being data-responsive.

In pockets, the Town is of course, using data to inform practices and using reporting and analysis to better understand service delivery, however, a longer-term goal for the Town is to leverage data and analytics consistently and more effectively across the organization to mash-up data from different sources (e.g., Finance, HR, Asset Management and GIS), to analyze performance, to identify patterns and distributions and to begin to anticipate and prepare for the future by getting into predictive analytics.

Many organizations today are using data analytics to make business decisions. Rather than relying on instinct or intuition, these organizations analyze data, produce information and base their business decisions on that data.

The GIS Specialist has some analytics skills and has begun to consider a data program, however, the analytics program is not developed, meaning the business cannot take advantage of data analytics to drive business decisions.

There are more urgent issues to resolve at this time, but the Town should consider this skill as a requirement for inclusion in the future GIS roadmap.

Developing a Data Strategy is important – but this comes later in the Plan – simply because, until the Town has its core processes digitized, it lacks the core data it needs to truly derive strategic benefits from data investments.

## 5.6 Corporate Posture

### 5.6.1 IT Governance

A key success factor for any organization with respect to technology is ensuring centralized and sound decision-making processes are in place that work across the organization to ensure that value for money is being delivered. This includes the prioritization of IT projects, resourcing and funding approvals, contract and vendor management, standards and policies development, training and education as well as the many other facets of strategic technology planning.

The Town instituted an IT Steering Committee in response to the recommendation made in the 2018 IT Assessment. It has been working very well to develop an understanding of the many projects that have IT components as well as an understanding of the need for standards and policies. Also, communications about technology projects have significantly improved thanks in part to the ITSC.

As the overall reliance on technology continues to grow, it is important that the ITSC continues to evolve. At this point, it is important to have a corporate lens on issues and projects to ensure that the best decision is being made for the entire organization.

Issues such as the proliferation of Cloud solutions, connectivity concerns, cybersecurity, data and information management are all considerations when prioritizing projects. A senior-level understanding and commitment on these matters is more important than ever before.

An assessment of the Town's IT Governance identified areas of opportunity, including:

- Update the existing terms of reference and principles.
- Review the relationship between the ITSC mandate and other corporate projects.
- Improve the alignment of IT Projects with the budget planning process, including resource capacity planning.
- Update and clarify the responsibilities around project intake and prioritization.

IT Governance is intended to aid the organization in aligning IT and digital activities with business and corporate strategy. It is about creating value by actively engaging the business to participate in IT decisions that impact the organization. The governance model should reinforce principles of collaboration, openness and transparency and collective decision making by establishing a structure that oversees IT investment, business application needs, IT architecture and infrastructure technology decisions.

In the 2020 Audit Plan Hot Spots Report by Gartner, IT Governance was identified as the top risk for organizations in 2021. “Abrupt work-from-home mandates have accelerated digital roadmaps, causing many organizations to vault years forward in the space of a few weeks. This move has spurred the rapid adoption of new technologies both on the employee and customer side, presenting new challenges to productivity, consumer preferences and guarding against security vulnerabilities.”

A sample IT Governance framework:

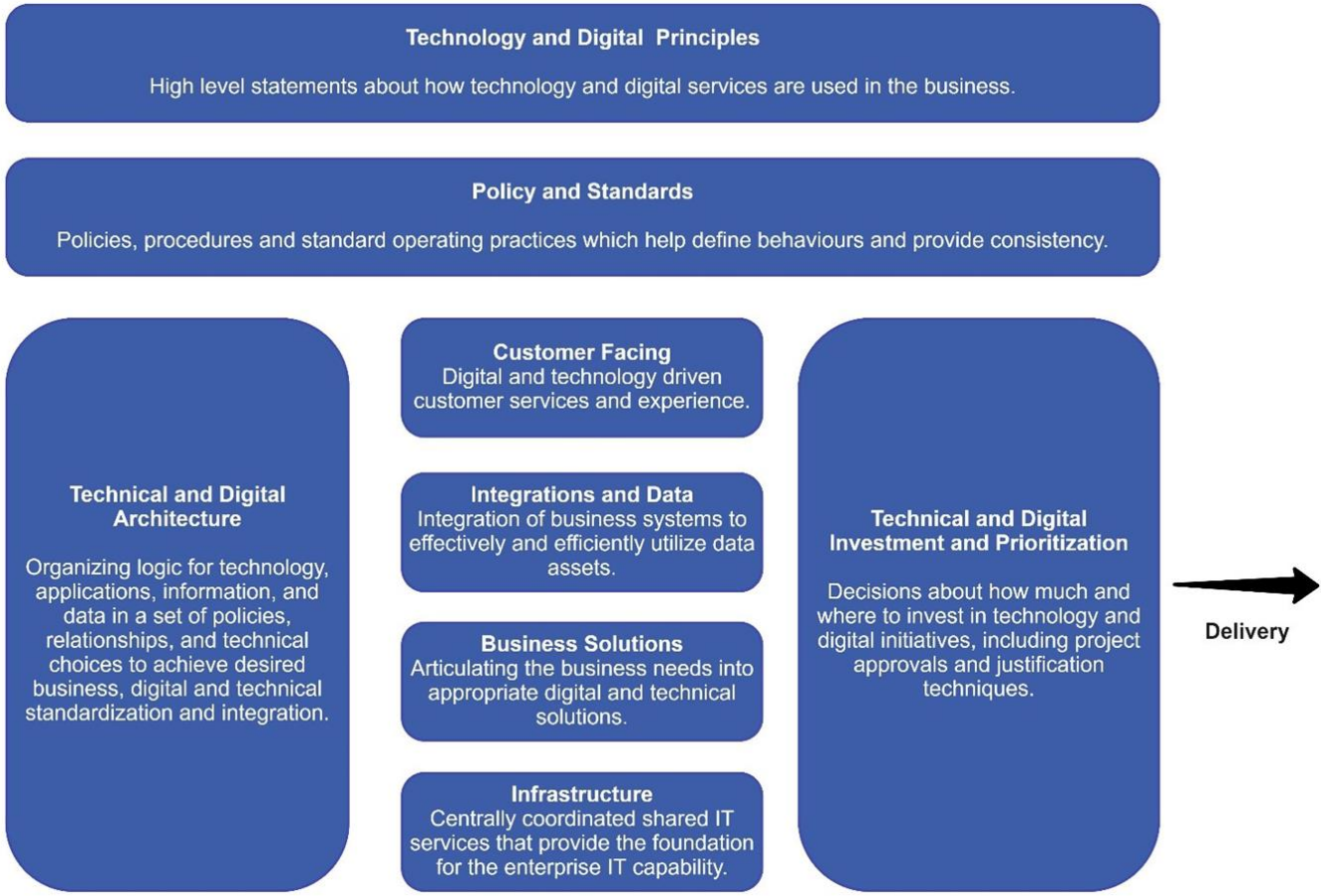



*Figure 9 Sample IT Governance Framework*

Organizations often view decisions about technology as complicated, technical and “best left to the experts in IT”. However, decisions about technology often have ramifications well beyond the technology itself.

Some questions to ask would be:

- How do we want to use technology in our business?
- What technology do we want our people to use and how do we want them to use it?
- How much should we spend on technology?
- Which of our business processes should we direct our IT dollars toward?
- What do we need to tackle first? Should we do this now or later?
- How secure do we want / need to be?
- What should be available first in the event of a data centre outage or a disaster event?

These are not decisions for the technologists in the IT Division alone – they are important business decisions that the leaders of the organization must address. There are key areas of focus that should be considered through technology governance, namely those that seek strategic alignment, value delivery, risk management, capacity/resource management and performance management/delivery.

There will always be purely technical decisions to be made – where the right technical staff with appropriate expertise will need to be involved – but in most cases, technology experts should be advising business leaders. The ITSC is intended to ensure major IT decisions will be informed by value and risk to the organization. The IT Governance Framework does not need to be complex to be effective and, over time, the process can be evolved to fit organizational needs. The Town successfully started a governance framework and now is the best time to update to ensure its effectiveness.

The key to implementing good IT governance is to keep it simple – to not get overburdened by process and procedure. Initially, the conversations are what are most valuable. The governance framework will take shape as the various groups adapt to their mandates and begin developing and reporting on Work Plans.

The goals of an IT Governance Framework are to:

- Establish a clear mandate and authority for all technology and digital decisions.
- Engage stakeholders directly in technology and digital decision making.
- Better coordinate corporate technology and digital initiatives, from which wider benefit can be derived.
- Establish a more rigorous evaluation and selection process for technology and digital projects – to ensure a focus upon ‘high value’ projects.

- Track the business benefits and value accrued from investments in technology.
- Ensure more effective resource utilization within IT and the business by focusing upon corporately agreed directions.

A key responsibility of an IT Steering Committee, regardless of its composition, is to monitor that the IT Master Plan continues to align with Corporate Strategy and to guide major decisions on IT systems and processes. There are key areas of focus that should be considered through technology governance, namely those that seek strategic alignment, value, risk, capacity management and performance/delivery.

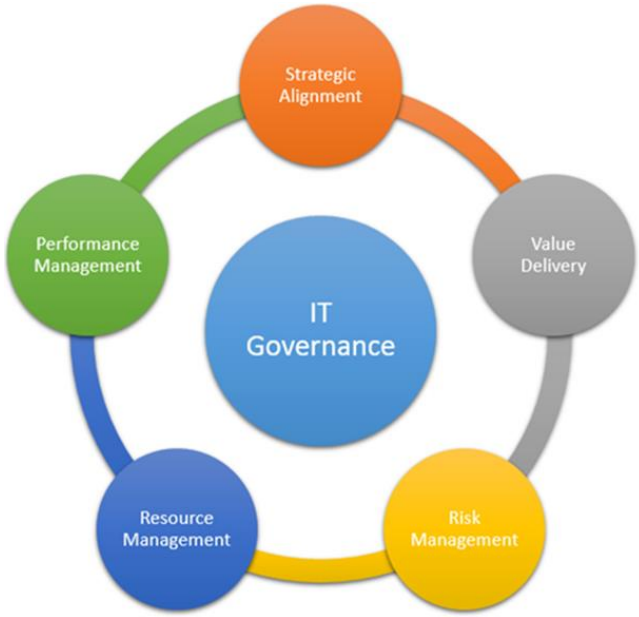



*Figure 10 IT Governance Areas of Focus*

### *Proposed ITSC Structure*

The current structure is proving to be too large, making it difficult to schedule meetings and have detailed conversations. It is recommended that the CAO and Department Heads identify a subset of the DH team to sit on the ITSC. Consideration could be given to other senior level staff (with decision-making authority) who may have good reasons to be on the committee. Reasons such as a major project coming up, they utilize technology in a significant way, or they have some expertise that would be of value to the ITSC.

It is further recommended that the Town establish relationships between various project teams and the ITSC to ensure an understanding of project requirements, status and expected benefits. Often the ITSC will be informed of a new project but then they do not hear status updates unless there is a problem.

The following diagram illustrates the structure of an effective IT Steering Committee.

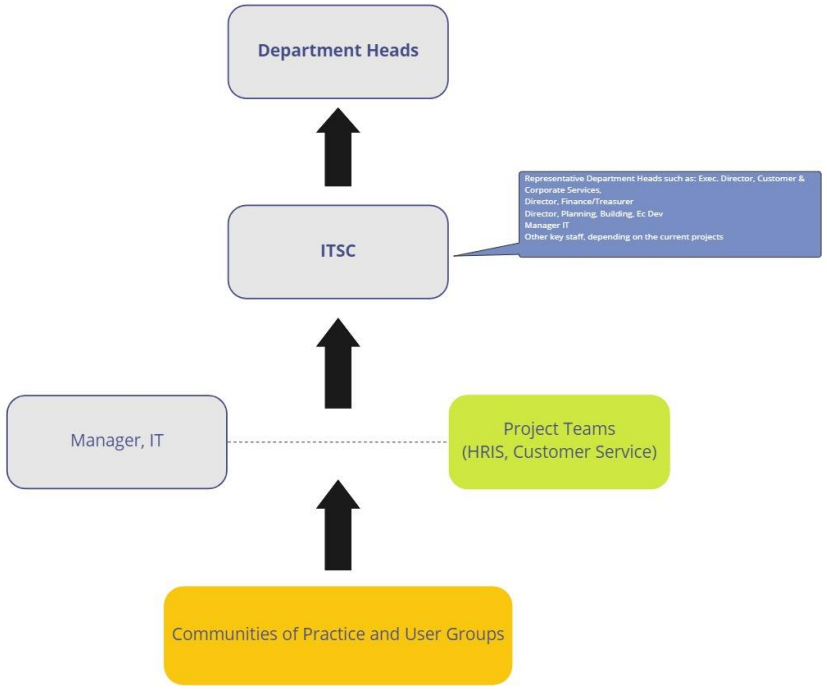



*Figure 11 ITSC Structure*

### *Community of Practice*

Communities of Practice (COP) are informal and/or loosely defined groups and networks of people that can be critical in supporting emergent corporate disciplines such as data, solutions, systems, tools and the application of technology across the organization.

Many exist without formal terms of reference and, instead, focus on directly managing and sharing knowledge in a key area. This knowledge can be created, organized, revised, and shared. Such knowledge will be extremely valuable to help inform ITSC because it is generated and revised by people who are well attuned to "how things are currently done". COPs and user groups help to give technology practitioners a voice.

Over time, the Town should establish several COPs designed to better engage staff in the growth of technology tools and processes. COPs can empower frontline staff by identifying improvements that would directly make their jobs easier and improve the overall service or process they are managing on behalf of the Town.

Employing these communities directly helps to legitimize a new process or discipline (e.g., Project Management, system user testing, etc.) because they provide an opportunity for those involved to discuss how their participation contributes to real change.

These entities can report through IT or to ITSC directly. An evaluation in each case should be made to determine what is most practical. These may be internal or external in nature.

### *Project Intake and Prioritization*

Any organization only has a certain capacity to take on new projects on top of existing workloads, and so each request must be considered carefully. This would include value, risk, costs, and resources. A review of major project requests such as system upgrades, new system purchases and other projects that would take time and resources is always required.

The Town has an intake process that is considered by some to be too detailed. There is a lack of clarity around when this intake form needs to be applied as some projects seem to move forward outside this process. Also, the process is often applied to small projects that don't seem to require the effort of a business case development. Currently staff will submit a Business Case to the ITSC for approval. This works well for larger, more complex projects but can be cumbersome for smaller requests.

To further clarify actions, a Delegated Authority model should be established to allocate responsibility for managing work based on the overall cost and scale of a project. A Delegated Authority model for the Town will help smaller projects (which have been proven to be viable and affordable) move forward more expeditiously through a simple change request process.

| Project Size | Description | Threshold | Responsible | Documentation |
|---|---|---|---|---|
| **Incidents and Change Requests** | Handling of service requests for incidents and requests through the Service Desk or minor changes to existing solutions such as configuration changes or a new report. | Up to 10 days or < $5k | Manager, IT and business lead | Change Request Process |
| **Small** | A project that has a short duration, low level of risk and involves a low level of expenditure. | Up to $20k or Up to 50 days | Manager, IT and business lead | Idea Capture Form<br>Project Proposal Form |
| **Medium** | A project that has a moderate duration, medium level of risk and involves more significant amount of expenditure. | Between $20k - $50k or 50 - 200 days | ITSC | Idea Capture Form<br>Project Proposal Form<br>Business Case Form |
| **Large** | A project that may have a longer duration, high level or risk (due to profile, involvement) and involves a fairly high level of expenditure for a technology project. | > $50k or > 200 days | ITSC | Idea Capture Form<br>Project Proposal Form<br>Business Case Form |

The Manager of IT should perform this evaluation with input from the appropriate stakeholders from the affected business units. There will be some tough decisions to make at times, but this delegated authority process will allow for more streamlined project delivery while still ensuring alignment with Corporate strategy and priorities.

### 5.6.2 Cloud Technologies and Framework

To build a modern, collaborative technology experience – one that supports real-time collaboration with the ability to use mobile devices for field staff and remote workers, but also for office staff – is becoming more dependent on Cloud technologies.

An increasing number of the Town's applications are starting to be delivered by third-party Cloud providers resulting in a reduction of on-premise infrastructure and support requirements. The recommended approach is to continue with this Strategy by migrating existing applications considered to be "low hanging fruit" while embracing a Cloud-smart approach to future software procurements.

Local governments have adopted the Cloud as a quick and economical solution to implement new systems. The turnaround time, cost of maintaining infrastructure and the cost of securing the owned infrastructure are outsourced to the Cloud service provider. This approach will allow the Town to concentrate on business process optimizations and service improvements using the existing systems, rather than spending resources on maintaining hardware.

Cloud policies are the guidelines under which companies operate in the Cloud. These policies can also be used for financial management, cost optimization, performance management, and network security. In considering the Town's current posture with respect to Cloud services, a policy must be developed to address current and future Cloud deployments.

When procuring Cloud solutions, there are a specific set of requirements (security, disaster recovery, etc.) that need to be built into the appropriate RFP templates. These requirements are usually described in the form of a set of questions that Cloud vendors and managed service providers must answer. The Manager of IT needs to ensure that these requirements are updated from time to time as Cloud standards change. During the procurement process, all Cloud solutions must be reviewed against this checklist and shown to meet the requirements (or provide acceptable mitigations) before a solution can be purchased or implemented.

There are times when the Manager of IT may need to engage with a consulting firm (third party) during the procurement of Cloud solutions. For example, where the vendor cannot provide evidence of their own testing program, the Town may engage with a consulting firm to conduct a security assessment / penetration testing of Cloud-based solutions that they are considering.

As Collingwood moves more of its services into the Cloud, there are implications for how staff access systems, how systems are managed, when and how they are updated, and how learning is done.

Management and staff will need to become familiar with these new modes of working. Some initial education and the socialization of key concepts as new services move to the Cloud, will prove to be valuable in helping people adjust to the new ways of doing business and providing services.

### 5.6.3 IT Policies and Standards

Consistent with the commentary throughout this section, many of the decisions related to technology are business or management decisions. ***These are not decisions to be made by IT alone on behalf of the corporation***.

For example:

- Which employees get smartphones?
- Who can buy new technology?
- Can a member of staff use their personal phone at work?
- Who is authorized to register a web domain for the Town?
- Which websites can staff access, and should that activity be tracked?
- What content is saved when an employee retires?
- How much space does an employee have in email?
- Which systems need to be up and running first in the event of a disaster?
- How secure do we need to be?

For each of these decisions, several factors need to be weighed including business impacts, employee impacts and, importantly, cost implications.

Typically, IT recommendations and policy should flow from IT, through the IT Steering Committee and, if necessary, to Department Heads for final approval. Council will retain responsibility for budget approval as the final authority for municipal spending decisions and must approve Town policies, not covered through delegated authority to the CAO, if required by current practices.

Policies and standards should establish the parameters within which the Town uses technology and create clear expectations for those who use and manage technology. Conceptually, policies should balance empowerment with control. They should clearly define roles, responsibilities, and accountabilities.

The Town has several existing IT policies that should be revisited and reviewed on an annual basis. These include:

- Acceptable Use of Information Technology Policy.
- Password Policy.
- Remote Access Policy.
- Strategic Planning Policy.
- Mobile Communications Device Policy.

A standard IT Policy Framework typically addresses the above policies in addition to the following:

- IT Security Policy – Defines how the Town (as a whole) operates a secure and reliable technology environment, with adequate controls to protect the Town's information assets.
- Backup, Recovery which are part of the Business Continuity and Disaster Recovery Policy – Defines the backup and recovery plans for computer systems that store Town data. This policy is also designed to prevent the loss of data and systems in the event of an equipment failure or destruction or security incident.
- IT Procurement Processes Policy – Defines roles and responsibilities and processes for procuring technology solutions.
- Asset Lifecycle Management Policy – Ensures effective procurement, maintenance and operation and replacement of IT assets to ensure delivery of consistent, efficient, reliable, timely and cost-effective services for employees and the community.
- Hosted and Cloud Solutions Policy – Defines the Town's position with regard to Cloud computing and the due diligence required before procurement of Cloud solutions.
- Data Management (Lifecycle, Privacy) Policy – Ensures that the corporation can effectively manage its data assets while complying with required legislation. This includes Data Classification, Data-Sharing, Data Retention and Data Storage.

The Manager, IT – with the input of staff and stakeholders across the organization and the ITSC – should review, revise, and augment the corporate IT Policy Framework in the context of this Strategy to ensure that it accurately reflects how the Town wishes to use and manage technology.

Policies will be developed with business unit and ITSC involvement, and approval will follow the standard corporate policy development process.

### 5.6.4 Business Continuity and Disaster Recovery

The Town does not have a Business Continuity Plan (BCP) that includes a Disaster Recovery Strategy for technology. Recovery options need to be considered for IT systems and networks, and critical services such as telecommunications, internet connectivity, and power.

The various recovery options are as follows:

- **Do nothing** – Few organizations can afford to forgo all business activities supported by IT services and simply wait until services are restored.
- **Manual system** – For businesses without a large number of critical IT services, manual workarounds may present a feasible option until IT services can resume.
- **Reciprocal arrangement** – This option involves forming an arrangement with another company that uses similar technology.
- **Gradual recovery** – This option is often chosen by organizations that have certain business services supported by IT that are not required for 72 hours or longer.
- **Warm start** – This is an option used by organizations that need to recover IT services and facilities within a 24- to 72-hour period. To accomplish this, organizations often use commercial facilities that include operations, system management, and technical support.
- **Hot start** – This is also known as an immediate recovery. This option is used for critical services that cannot be down for any length of time. A hot start provides for immediate restoration of IT services. It is also one of the most expensive options to implement.

As part of a program initiation for BCP/DR, the Town needs to conduct the following activities:

- Perform a Business Impact Analysis (BIA) to define critical business services and their RTOs in the event of a disruption in services (see the sample BIA below).

- Perform an IT Maturity Risk Assessment to capture technology vulnerabilities, threats, and risks to the organization.
- Develop BCP plans for each department.
- Develop a DR Strategy to support departmental RTOs.

The BIA process will provide the necessary data required to properly scope the requirements for the DR Strategy. It is key that the business units define all RTOs. ***This is not a task to be performed by IT***.

1. List ALL services/processes - Determine the financial, reputational, and operational consequences of an interruption which lasts for the given period of time.

*For Financial Impact - Corporation needs to determine the thresholds that determine the five levels of severity

| | | | | CRITICALITY LEVEL | CRITICALITY RATING | CALCULATED RTO |
|---|---|---|---|---|---|---|
| SERVICE/PROCESS | COURT PROCEEDINGS | | | Critical | 115 | 0 - 4 Hours |
| IMPACT | 1 DAY | 3 DAYS | 1 WEEK | 2 WEEK | 4 WEEK | WEIGHT |
| FINANCE | $0 to $25,000 | $0 to $25,000 | $0 to $25,000 | $0 to $25,000 | $0 to $25,000 | Normal |
| REPUTATION | Moderate to High | Moderate to High | High | High to Catastrophic | High to Catastrophic | Vital |
| OPERATIONAL | Moderate to High | Moderate to High | High | High to Catastrophic | High to Catastrophic | Normal |
| LEGAL AND REGULATORY COMPLIANCE | Moderate to High | Moderate to High | High | High to Catastrophic | High to Catastrophic | Normal |
| CONTRACTUAL COMPLIANCE | No to Low | No to Low | No to Low | No to Low | No to Low | Normal |
| | | | | | Maximum Tolerable Outage (MTO) | Over 3-Days |

*Figure 12: Sample Service/Process BIA*

### 5.6.5 IT Service Management

The Town has limited ITSM practices in place and needs to invest in a proper system to support the growing demands of the business. The solution should be Cloud-based to support a strategy to reduce on-premise IT infrastructure and the associated support costs.

The system should, at a minimum, provide the following functionality:

- **Incident/Problem Management** – Helps the Town track and manage unplanned events or service interruptions. The purpose is to restore the service to its normal state at the earliest.

- **Change Management** – This is a process that would help the Town implement or enable company-wide changes while minimizing the impact of those changes on its IT service delivery.
- **Knowledge Base** – The Town should have the ability to create, share, update, and access knowledge regardless of location.
- **Asset Management** – The ITIL best practice framework will ensure that all company-wide assets are maintained over time, and employees can reap the maximum output from them. Asset management also helps to understand which new assets are in demand and which existing ones need replacement.
- **Reporting (Metrics/Trending)** – Creating detailed reports can lead to better analysis, evaluation, and, most importantly, improved decision-making.

The system needs to be ITIL compliant.

A strong approach to ITSM will help position IT as an enabler of digital growth. However, doing so successfully (with results) involves more than simply implementing a point ITSM solution. An enterprise approach is required for the Town, in which technology and business teams work closely together to help the ITSM function address the business's needs.

There are numerous Cloud solutions on the market that are extremely cost-effective and feature-rich. Most third-party ITSM vendors provide excellent onboarding services and ongoing support which will lower the impact on Town IT resources and allow for an easy transition and good return on investment.

# 6.0 Building the Framework for Success

The Service Delivery Review completed in 2021 identified that Collingwood is "among the fastest growing communities in Ontario, this growth will impact and change the way the organization operates in the future." It further noted that the Town will "continue to see an increase in volume of transactions with citizens as well as evolving demands on services and customer service."

Considering the recommendations of the Service Delivery Review as well as the requirements for today's workplace, there are changes needed to enable the IT team to support growth and future digital opportunities.

## 6.1 The IT Team – Building on Strong Foundations

The IT team must be positioned to deliver on the new projects as well as maintain the strong foundations, otherwise success will not be achievable. IT needs to be recognized as a strategic function that has the power to transform service delivery – in partnership with the business departments – to make experiences better for customers, to help staff be even more efficient and to help the Town do more with less.

The IT team is doing an excellent job of delivering services and managing the environment. As demands increase and reliance on technology increases, the stability and security of technology becomes even more important. The team needs to be able to grow and evolve at the same time to continue to provide a high-level of service.

The diagram below depicts the features of an IT team's quality and productivity and the attributes that characterize a team at that level.

- Ad Hoc – a team that has limited infrastructure management and no helpdesk.
- Repeatable – a team where processes need defining and one that is primarily reactive, where incident management needs improving and responsibility for technology is disjointed.
- Defined – a team that is stable with defined processes; a team that can predict and prevent performance problems; a team that uses change management and standardized tools.
- Well-Managed – where IT is more of a strategic partner with defined service levels and accountability; a team that has strong business relationships and a high-performing infrastructure; a team that uses integrated business systems against a planned roadmap and an understood trajectory.
- Optimized – the pinnacle IT team that is innovation-led and automated; operating with optimized service levels and a business process viewpoint; a continuously improving team.

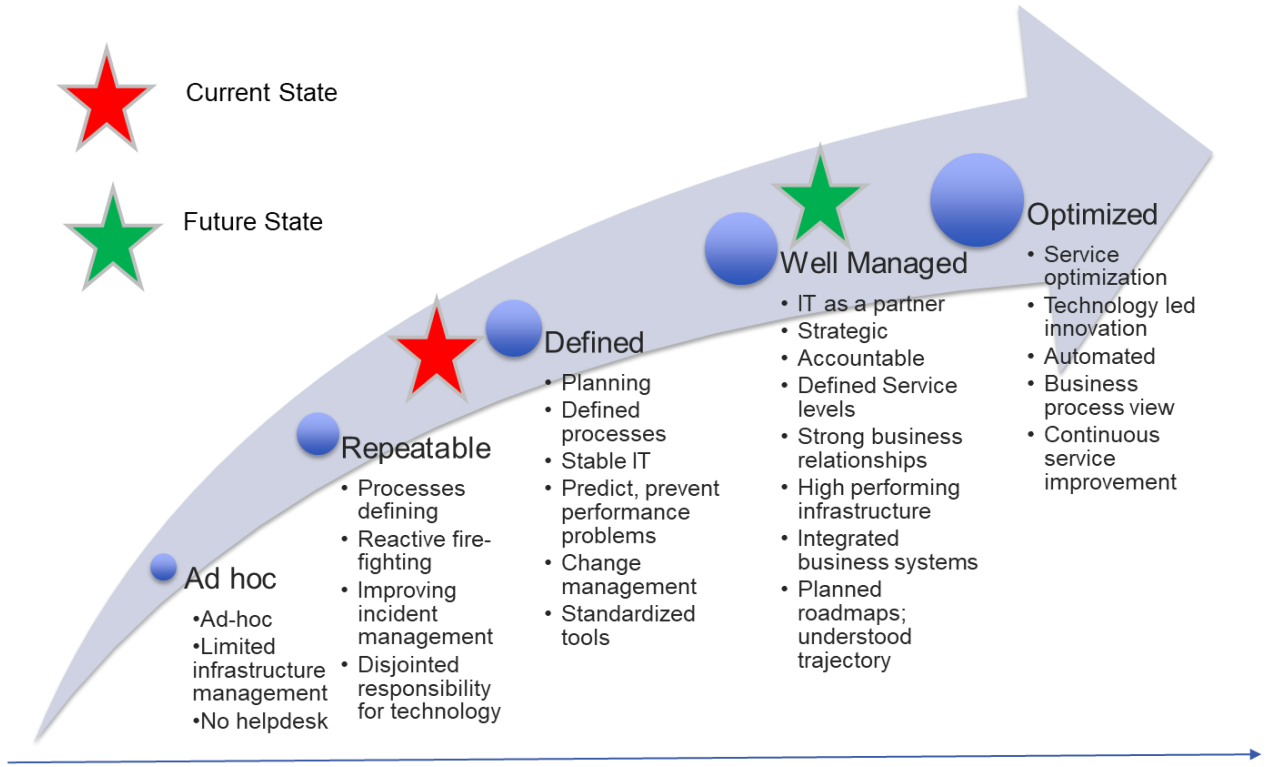



*Figure 13: Attributes of IT Team Quality and Productivity*

A strong, well-functioning IT team that operates at the "Well-Managed" level or above, is one of the aspects that is key to successfully achieving all modernization goals previously mentioned. Establishing an IT team that has the resources and capability to meet this mandate is key to moving toward a future state in Collingwood where:

- "Best in class" technology drives culture change.
- Innovation is an organizational priority.
- Silos between departments no longer exist, and
- Constant and productive communications occur between departments.

An IT function performing at a “Well-Managed” or better level, is able to take all the internal culture change and lead the organization in the development of user-friendly services for its external and internal customers.

Strong business leadership and partnership between IT and the business units is the true key to success, so building an environment in which business units and IT actively cooperate and collaborate will be central to the Town’s ability to change its culture and its story.

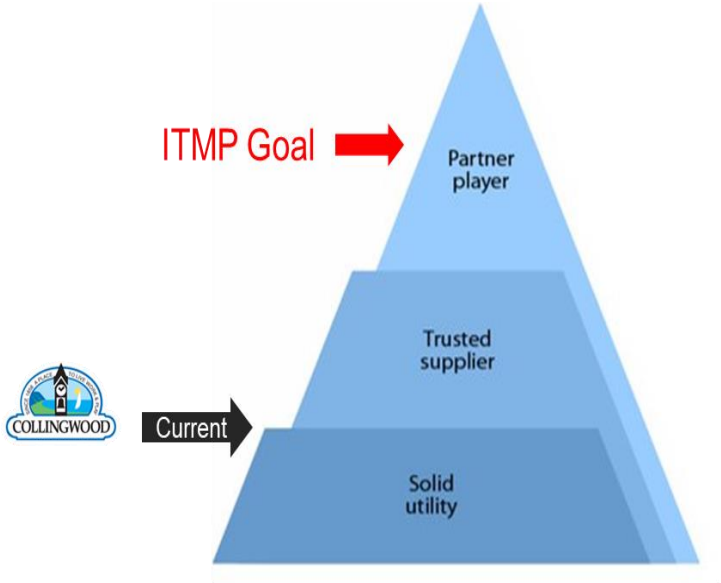
The DH’s have a solid understanding of the importance of technology and how to leverage digital technologies to improve business operations. Business leaders are responsible for leading technology – assisting or driving business change and transformation within their business units, with responsibility and clear ownership of their own business processes – and they do so in active partnership with the IT team. But more attention to resourcing is necessary, both full-time resources and contract resourcing.

### 6.1.1 A More Effective Delivery Model

To have an IT function that can perform at a “well-managed” level or better requires the IT team to transition from its current role of the best Solid Utility to one that is a strong Partner Player (as illustrated in the figure below).

The diagram below depicts the characteristics of the different levels an IT team takes in its progression. It must be a “Solid Utility” before it can progress to a “Trusted Supplier” and ultimately a “Partner Player”. The Current State Assessment showed that Collingwood's IT division is very clearly a Solid Utility with some movement into the Trusted Supplier level.

Current IT foundations (processes, policies and capabilities) allow the team to operate at a Solid Utility level by consistently delivering reliable IT services and support. The team is trying to operate at all three levels and departments are now expecting more. This leaves little time to put in place the right processes and practices that could help IT to be more efficient or to allow for more effective planning.




**Partner Player - IT is integral to how we do business**
IT organization is expected to closely partner with business units to help identify, plan and deliver significant business transformation initiatives - plus be a trusted supplier.

**Trusted Supplier - IT delivers critical functionality and services**
IT organization is expected to deliver application projects on time and on budget, based upon the business unit's requirements and priorities - plus be a solid utility.

**Solid Utility - Keep the lights on**
The IT organization expected to provide cost effective-dial tone reliability with transparent costs.

*Figure 14: IT Team Progression*

The IT resources are operationally focused on keeping the lights on with staff spending 85-90% of their time on support and less than 10% on projects. On the other hand, the Manager of IT is spending 75% of their time also on operational support, just 15% on general management tasks, leaving less than 10% of their time on projects.

Currently, the IT Team is too busy responding to help requests or problem solving, without real focus or thoughtful prioritization. They respond to calls as they come in and are often diverted by many interruptions. This leaves little time to put in place the right processes and practices that could help them to be more efficient or to allow for more effective planning.

Based on current resources, there is no additional capacity to perform project work. New resources have been identified later in this section, which will assist in this regard, but it must be anticipated that demand for IT services will continue to outweigh available resource capacity.

The current complement of the IT Division is under-resourced. There are not enough resources to be able to support the many business systems in place, and not at all, the new and emerging requirements. For example, the Manager, IT provides front line support for staff in addition to the more strategic duties expected of a manager.

To become a Partner Player, the IT division's paramount goal should be to understand the challenges faced by the employees and customers and to work in collaboration with multiple stakeholders to develop appropriate services and solutions that address those challenges.

Being a Partner Player is about fostering a collaborative mindset and working to develop strategic partnerships with other departments. For example, together, IT and the business (along with other stakeholders) research, develop, and design IT solutions to solve business challenges. Another approach is to maximize the value of each IT expenditure by sharing solutions and systems across departments and not developing standalone solutions.

For these, as well as IT policies, IT will encourage feedback so there is clear understanding of expectation for IT services as well as allow room for improvement.

### 6.1.2 IT Leadership

It is recommended that the Manager of IT shift focus to spend less than 50% from server and network infrastructure support and tactical tasks to be able to have more time for strategic technology matters to enable and drive business transformation. The Manager of IT should be proactively identifying opportunities to use technology to improve the operation, efficiency and effectiveness of the whole corporation and to help business leaders successfully implement technology-enabled change.

The expectation is for the Manager of IT to operate as more of a strategic advisor to the CAO and the Department Heads in matters of technology. The role must also provide strategic leadership and direction to the IT team, setting the strategic direction and priorities, challenging and mentoring staff to achieve key objectives, and building a collaborative and partnership approach to getting things done.

### 6.1.3 Changing the Focus of the IT Team

With the shift in focus as well as additional responsibilities for the Manager of IT, it is an opportune time to look at ways to ensure the IT division can operate in a more resilient and more efficient way that will better meet the needs of the organization. The goals should include:

- Establishing clear functional areas, with clarity of roles and skills required.
- Allowing for career progression and succession planning.
- Establishing a stronger support function and reducing the risk of operational interruptions, helping to track and resolve service requests.

- Creating business solutions capability and capacity with a specific focus on the new enterprise business solutions that will enable business departments to become more efficient and consider more innovative ways to deliver services.
- Creating greater capacity to deal with network growth, security, Cloud, and data responsibilities.

Looking to the future, projects related to infrastructure and business solutions, as well as growing the GIS Program, will be key areas of focus for the Town. To date, the responsibilities of project management, needs analysis, contract management and implementation for both network infrastructure and business solutions seem to be split between the Manager, IT Services (IT) and the System Support Coordinator, depending on their workload and capacity. A challenge will be providing the appropriate level of resourcing to the number of projects needed as well as to meet the ever-growing support and advice expectations.

At a high level, the IT Division is currently under-resourced (for example, there are gaps in the business solutions support) or under skilled (for example, in data and business analysis) to support the program of work that is underway and planned.

Greater upfront analysis of requirements is needed, matching the technology to the business need, and providing follow-up support in-house. There will always be reliance on the vendor partners for support but there is the growing requirement for more focused and planned in-house support. In addition to the shift in focus for the Manager of IT, the other positions would find value in clarifying their areas of focus and responsibilities.

### *Coordinator, Systems Support*

This role needs to be provided greater capacity to deal with network growth, security, and Cloud responsibilities. Security is of paramount importance to any organization, especially government, and is a task that needs greater attention to management and mitigation.

The responsibilities should focus on overall network planning and design, security management, vendor relationships and Cloud infrastructure management. Consideration should be given to certain tasks that could be outsourced such as cybersecurity testing to augment internal skills and capacity. Currently, the position deals with software and application support as well as network and security.

### *Service Desk Coordinator*

This resource is focused on helpdesk support, providing excellent frontline services to all staff, including colleagues in IT. Attention should be given to building their capability in IT Service Management and being able to analyze the tracking system data for insights and trends.

### *GIS Specialist*

As mentioned, there is the need to identify and build integrations and interfaces ensuring the core systems work efficiently together. This will require expanding the role of the GIS Specialist to design, implement and manage the interfaces between multiple enterprise systems (CityView, Great Plains, as well as other expert systems) with GIS as a starting point.

To focus on integrations and overall GIS Strategy, the GIS Specialist will need to pass along some GIS data collection work to the business departments to be completed as part of their business processes.

Many organizations today are using data analytics to make business decisions. Rather than relying on instinct or intuition, these organizations analyze data, produce information, and base their business decisions on that data. The GIS Specialist has analytic skills that can be built upon further to develop the Open Data Program as well as build data analytics capability within the Town.

## 6.1.4 Future IT Resourcing Model

As requirements for technology and digital support continue to evolve and grow, IT resources should grow proportionally.

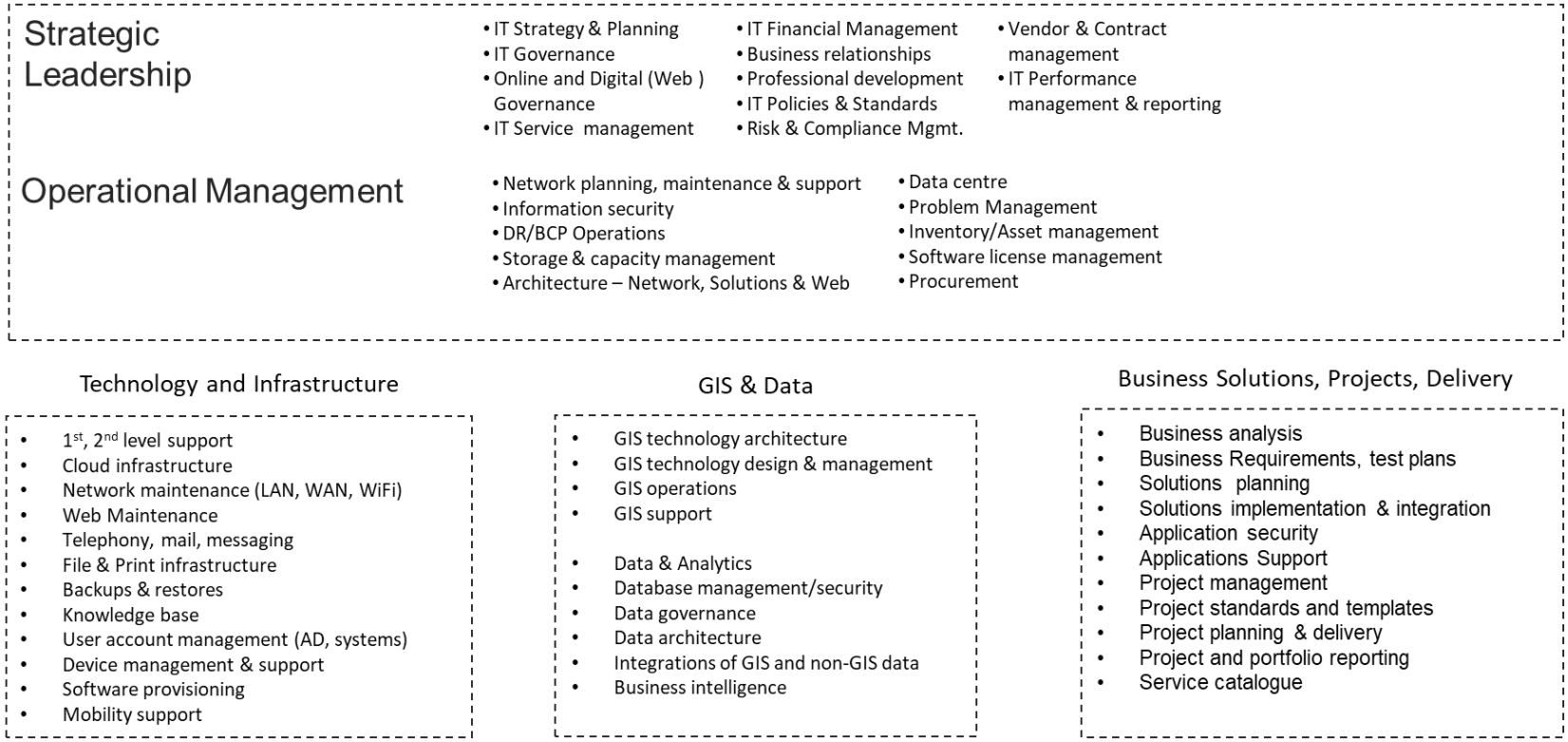
New skills will be required as new systems come on board. Further skills in the areas of data, analytics, business intelligence and contract management will need to be added to the team.

To meet increasing demands and to allow the IT team to focus on the things they do best, it is recommended that additional resources be added. A specific goal is to ensure the day-to-day support activities that interrupt IT are more contained but still maintain the high standards of service and the highly-rated levels of customer satisfaction. Town staff are becoming more and more dependent on technology to deliver services, so they need to know the systems are reliable, stable and accessible as needed.

The team is already well-positioned in functional roles that are considered best practice. This aligns the team with the right resources and skills necessary to build for successful growth. All projects benefit from this organization model as it encourages the team to rely on and support one another.

### *Ideal Functional Model of IT*

The following represents the ideal functional organization of IT for both leadership and teams.




The following chart represents the different roles and common functions of an IT Team. They address Business Solutions, projects and delivery, Technology and Infrastructure as well as GIS and Data.

| Role | Functions | Functions | Functions |
|---|---|---|---|
| IT Systems Administrator | • Cloud infrastructure<br>• Network maintenance (LAN, WAN, Wi-Fi)<br>• Telephony, mail, messaging<br>• File and print infrastructure | • Software provisioning<br>• Network planning, maintenance, and support<br>• Information security<br>• BCP/DR operations<br>• Back-ups and restores | • Storage and Capacity Management<br>• Architecture – network, solutions, and web<br>• Data centre<br>• Problem management<br>• Procurement |
| Applications Analyst / Business Analyst | • Business analysis<br>• Business process analysis, IT business cases<br>• Business requirements, test plans | • Solutions planning<br>• Solutions implementation and integration<br>• Application security<br>• Applications support – enterprise and expert<br>• Service catalogue | • Project management<br>• Project standards and templates<br>• Project planning and delivery<br>• Project and portfolio reporting |
| GIS Specialist | • GIS technology architecture<br>• GIS technology design and management<br>• GIS operations<br>• GIS support | • Data and analytics<br>• Database management / security<br>• Data governance<br>• Data architecture | • Integrations of GIS and non-GIS data<br>• Business intelligence |

| | | | |
|---|---|---|---|
| Desktop Support Specialist | • 1st, 2nd level support<br>• Web maintenance<br>• Knowledge base<br>• User account management (AD, systems) | • Device management and support<br>• Mobility support<br>• Inventory / asset management<br>• Software license management | • User training |

### *New or Updated Functional Roles*

The largest gap for Collingwood is in the Business Solutions, Projects and Delivery function. The current team do their best to provide support and help out as needed but supporting the solutions is a critical task that requires specific expertise and focused time and attention. The other major gap is in GIS service delivery. Currently only 1 person manages all GIS functions and services for the Town and is required to be focused on support and basic services. Adding another resource will greatly increase capacity to start delivering higher value GIS solutions and begin building a data program for the Town.

It is recommended that the following new positions be added to address areas of risk where the organization is highly dependent on a single staff member as well as to increase capacity as new solutions are added.

#### *Application Analyst / Business Analyst (NEW)*

There are a number of projects ahead, most of which are in the Business Solutions domain. Each of these projects will require business analysis and application development skills to support systems configuration during the project and for support after solution implementation. A specific resource, such as an Applications Support Analyst or Business Analyst, will help the business to define requirements, analyze current systems and determine specifications for new systems or improvements.

Similarly, IT projects are managed in an ad hoc manner, with no formal status reporting, process improvement or change request management. This resource will allow the Town to manage business solutions effectively and provide support for new features, reporting and other capabilities. Until a formal Project Manager is hired, this position is usually able to work with the vendors and the Manager, IT to provide project oversight.

The current approach has been to rely on vendors and suppliers to be involved in the configuration and installation of software and hardware. The team should continue to utilize and expand its use of third parties and contracted resources to ensure that it can deliver services that meet the needs of the Town. However, coordination of third-

party support as well as in-house support should be provided by this position. For example, the Application Analyst / Business Analyst could provide initial support for solutions such as CityView and Great Plains.

A sample job description is found in Appendix 2.

It is recommended the Town consider an additional full-time staff position to take on the role of Application Analyst / Business Analyst. The primary role would be to build strong relationships with business units. This will also free up some capacity for both the Manager, IT and the Coordinator Systems Support.

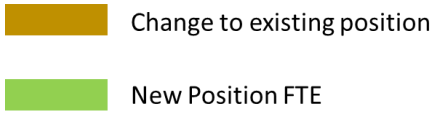
### *GIS Technician*

Provides support to the GIS Specialist, the GIS Technician will provide frontline support to staff enabling the GIS Specialist to focus on higher-level tasks. The GIS Technician will provide GIS services related to data creation, maintenance, analysis, and cartographic products for staff and the public. Works with clients and participates on project teams to incorporate GIS best practices for data, requests, and products. The Technician will assist with the creation and maintenance of GIS data collected from internal and external stakeholders, including editing datasets, creating map layer files, adding and editing data fields, attributes and the definition of metadata. The role will also digitize, scan, and geo-reference hardcopy and digital images as required.

### *Coordinator, Systems Support (Change title to IT Systems Administrator)*

With the addition of an Applications Support position, the Coordinator Systems Support should focus more on network management, cybersecurity, and Cloud as well as providing backup to the Manager, IT. A key function would be managing the cybersecurity program although it is too much for one person to handle. Recommendations are made in section 6.1.6 Additional Resourcing Opportunities, for outsourcing and leveraging industry experts and cybersecurity is an opportunity. It is further recommended that the title be changed to IT Systems Administrator or similar to better reflect the new focus.

The following organization chart depicts the recommended structure for IT in the short term, 2023 – 2024.




Short Term IT Organization

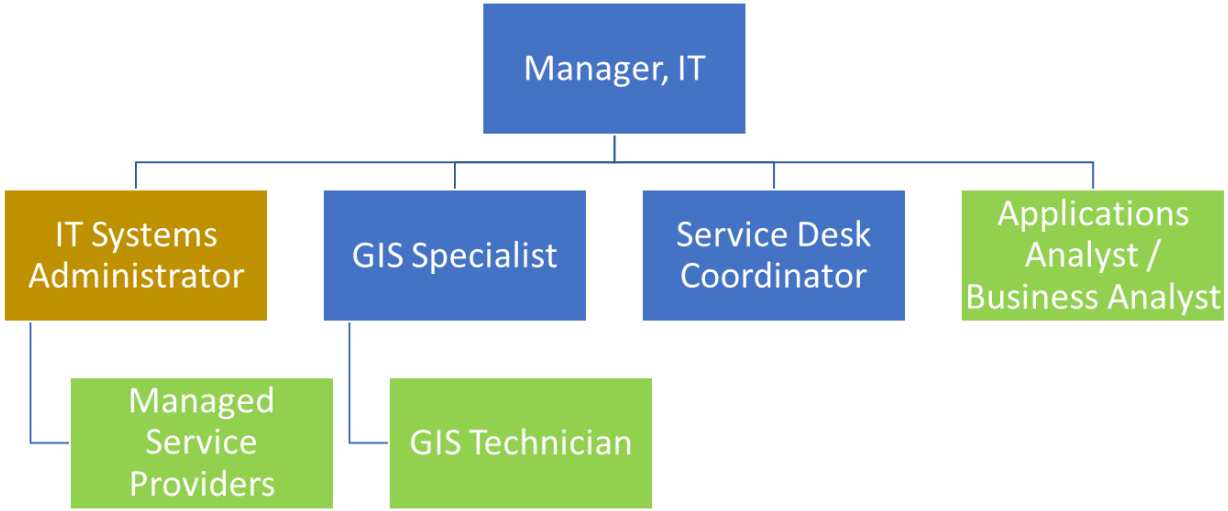



*Figure 15 Proposed Short Term IT Organization*

### *Positions for Future Consideration*

Requirements for technology and digital support will continue to evolve and grow and as such, IT resources should grow proportionally. New skills will be required as new systems come on board and additional skills need to be developed in the areas of data, analytics and business intelligence. Understanding that adding new full-time positions is a challenge, it is recommended that the following positions be approved to address areas of risk where the organization is highly dependent on a single staff person as well as to grow capacity in subsequent years:

**Network Technician** – Provides first and second level support for network systems, servers, storage systems and telecommunications. The role will also have responsibilities for network security and contributing to business continuity under the direction of the Coordinator, Systems Support.

**Data Analyst** – Provides guidance and support for overall data management, data analytics and business intelligence models. The Data Analyst specializes in reviewing and reporting on data from multiple sources, the development of dashboards and metrics reporting. Responsibilities include data conversion, mining, classification, and auditing as well as quality assurance processes.

**Business Analyst / Project Manager**- Currently, most technology and digital projects are implemented without formal standards or methodology leading to partial implementations and limited, if any, integration. A Project Manager would bring the necessary skills to a project and be able to work with IT and the business departments to ensure successful implementation. The Project Manager would support departments in identifying business requirements for technology-related projects and lead the implementation of projects.

### *Target State*

These resource recommendations are intended to provide clarity around accountabilities and responsibilities for the IT team – improve distribution of responsibilities and allow time and capacity for focus on key issues and projects. They also allow for improved project delivery practices through the application of consistent project management practices and more complete end-to-end IT project management services. Finally, additional resources in IT will increase the organization's overall capacity to support improved policy and standards environments, enhancing the ability to fully leverage technology and move towards greater digital service delivery.

The following organization chart outlines a proposed target state for IT, with the addition of new roles to meet the expected new demands. As new major solutions or facilities are added to the IT Division's responsibilities, additional resources should be added. For example, adding a new service such as water billing will require new IT resources as this is not something that can be added to the already full workload.

Target State IT Organization

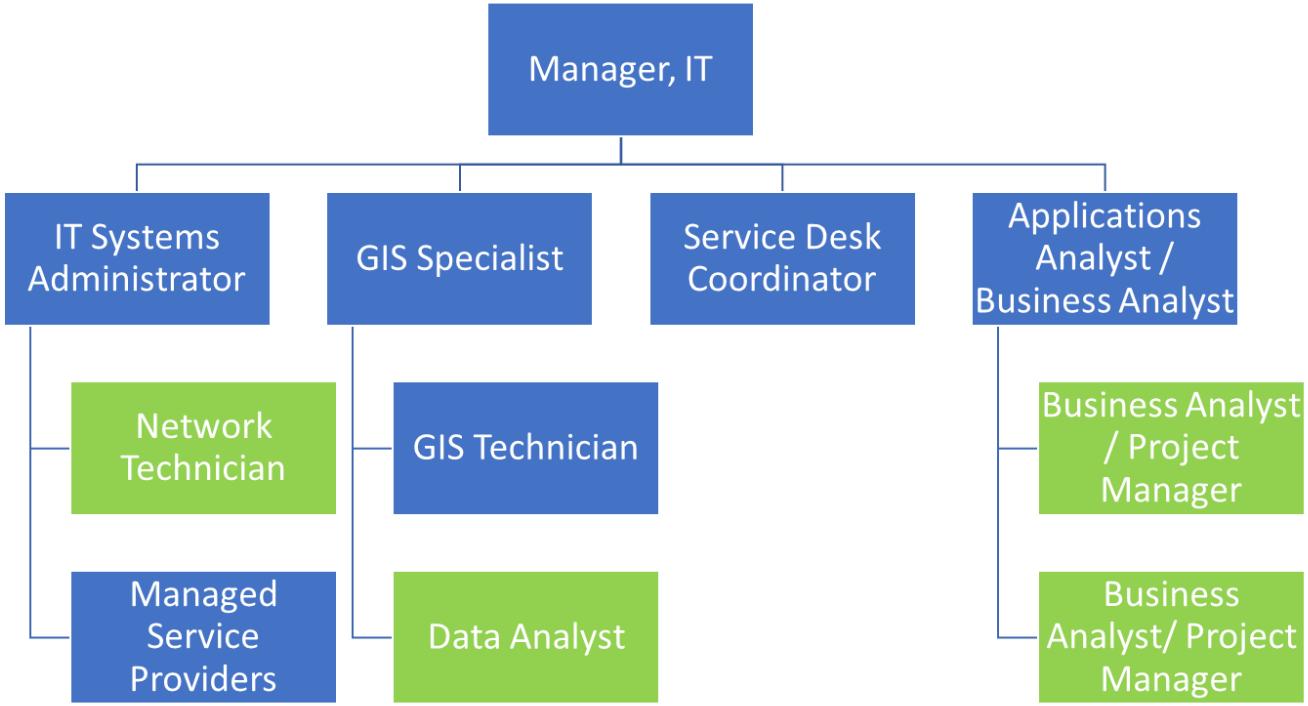



*Figure 16 Target State IT Organization*

These proposed changes are key to addressing the changing needs of the organization. These changes allow for a clear internal delineation of roles and responsibilities within the IT Division. They allow for a new focus for existing roles such as security and risk management and website and digital services from the existing team.

The new positions also enable an increased emphasis and capacity within the IT Division on solutions support, project planning, portfolio management and delivery as well as prepare for the future need for developing corporate data, analytics, and further digital capabilities. Finally, this creates an increased emphasis and capacity within the IT Division regarding digital architecture that will ensure the technology environment is well-positioned for future initiatives.

Other considerations, pending the successful delivery of this plan and evolving organizational priorities would include:

- an additional Service Desk Coordinator
- Digital and Web Specialist
- Data Architect
- Business Relationship Manager
- Security Specialist
- Integration Specialist

Potentially adding senior level staff such as supervisors would also be appropriate.

The alignment of technical resources to projects and organizational growth is key to success. It is important to also:

- Acknowledge that some areas have higher needs than others (E.G. Planning, Building and Ec Dev., and Public Works) and may require dedicated or higher levels of support from IT.
- Focus on skills growth, succession and succession planning in IT.
- Invest in digital culture across the corporation = more attention toward education, training and change management.

### 6.1.5 Clearly Defined Business Unit Responsibilities

In this section, the focus has been on establishing the new IT model, however, the role of directors, managers and staff in business departments is equally important to success.

This does not mean that leadership must understand technical-level-details of the technologies. It also doesn't mean "being good with computers". It does indicate that leadership has a good conceptual understanding about what it means to be a digital organization, and how to be successful implementing digital and technology-driven change and capabilities.

While the Manager of IT is responsible for helping business units implement technology-driven change, technology and digital thinking needs to be at the heart of business strategies for each business leader. Technology cannot be an afterthought or an add-on, it must be central to the achievement of business outcomes.

Furthermore, moving from paper-based to digitized processes involves persistent organizational as well as technological change for each business unit and for IT. Such a change is a genuine transformation – work practices and processes change, interactions with customers change, job roles and expectations change –

because of the implementation. Active leadership from business leaders and managers is critical to success. Leading from the front and leading by doing are key. Leaders shouldn't ask staff to use systems if they are unwilling to use the systems themselves.

When working on initiatives across multi-disciplinary teams, it can be difficult to know who is accountable. Apple uses the term "Directly Responsible Individual" (DRI) to refer to the one person with whom the buck stops on any given project, task or activity. The Town can borrow this concept and terminology in its technology program.

Every project should be assigned a DRI who is ultimately accountable for the success of that project. So, for the implementation of a corporate HR system – while there are numerous stakeholders throughout the organization – the DRI is indisputably the HR Manager. Success of that initiative should not be measured simply by the completion of the project or implementation of the solution, it is the achievement of the desired business outcomes (e.g., reduced number of payroll errors, reduced time spent processing timesheets, ability to generate workforce metrics easily and quickly like headcount, vacancy rates, etc.) that must be identified before the project starts.

The DRI is responsible for providing the vision and leadership for the project and has a very active/proactive role to play – not as a figurehead sponsor of a project, but as someone who is guiding and evangelizing the realization of the business capabilities as well as eliminating the barriers that impede their achievement.

### 6.1.6 Additional Resourcing Opportunities

#### *Hybrid IT Service Operating Model*

The reality of modern IT – particularly with small municipal teams – is that it is impractical to try to maintain in-house the necessary skills and capacity to plan, implement and manage all the Town's increasingly complex technical environment and burgeoning project demands. To do so would mean hiring an unfeasible number of additional IT staff, far beyond that which is recommended here.

Smart IT organizations approach this challenge by relying on a team of in-house IT staff with strong internal connections and understanding of the organization's business needs (business partners), who in turn, work with a network of trusted partners, vendors and solution providers to deliver the required services. The Town currently leverages vendors and local partners, such as the County, for support and should continue to do so.

This is a hybrid (Alternative Service Delivery, ASD) model of IT service delivery that combines internal IT with market-based expertise and services. In an ASD model, IT staff may begin to work as coordinators or orchestrators of IT service delivery that will be executed by a combination of internal staff and external providers. The

overarching goal is to provide services with lower cost, higher speed and agility while maintaining or improving service levels.

For this hybrid model, the IT team needs to determine which services can be delivered with internal resources and which services can be best delivered by external resources (other departments within the Town, external vendors, partners, contracted/co-op staff/students). The two most common, yet opposite, approaches are outsourcing routine tasks (at a lower cost) or outsourcing specialized tasks (required special expertise such as security oversight).

The goal should be to increase speed, agility, and project throughput by using the right mix of resources and skills for the job at hand.

These recommendations were made in the 2018 IT Assessment and are still relevant today. Leveraging opportunities such as those outlined below remain good solutions:

- Capital funding project contract or temporary staffing positions.
    - Projects are proven to be successful when staff can be dedicated to the project – not working off the side of their desk. To achieve this level of dedicated attention to projects, municipalities commonly use contracting for short term staff (1 or 2 year contracts). Costs for staffing contracts are “bundled” into the total cost of the project, thus, when projects are approved, the appropriate staffing to execute the project is also approved.
    - Contract staff may be used directly on the project but are more typically hired to backfill IT or subject matter experts in business units, freeing up internal staff to work on projects. This allows the Town to retain the accrued project learning and expertise, and to offer development opportunities to internal staff.
- Using Vendor of Record resources, enabling IT resources on demand.
    - Because of the regular need to bring in additional IT and subject matter business resources to support project activity, many municipalities (e.g., Richmond Hill, Guelph, Mississauga, Halton Hills) have embraced a “Roster” or “Vendor of Record” (VOR) model.
    - In this approach, the Town would have pre-qualified arrangements with multiple firms to provide products/services to the IT division for a defined period or defined terms and conditions including pricing. It is quick to get resources for VOR based on the Town’s requirements.

- Leveraging strategic partnerships.
    - Strategic partnerships with other levels of government (such as the County of Simcoe, or neighbouring municipalities like Innisfil, The Blue Mountains or nearby educational institutions such as Georgian College) allow the Town (specifically the IT division) to look for solutions or to implement or manage a solution.
    - The Town has already leveraged these partners on several occasions to help build or deliver solutions or address a municipal need. The regional IT leaders meet on a regular basis to share ideas, solutions, and challenges, presenting an opportunity to leverage each other's expertise.
- Out-tasking or outsourcing specific programs of work such cybersecurity.

Security management is a good example of an opportunity to outsource and leverage industry experts. It would be unfeasible to properly resource the internal IT team with the skills and expertise needed to ensure that the Town's data and technology ecosystem remains secure 24 hours per day and 365 days per year. With the increase of cyber threats, this is one where the importance of the service cannot be underestimated.

- Continued use of outside expertise to plan, design and set strategies.
    - Setting strategies before tackling projects is critically important to successful outcomes (measure twice, cut once). Fully exploring possibilities before diving in is essential.
    - In this area, there is clear value in engaging experts in the right measure, at the right time. Consultants with deep domain experience and with experience in developing strategy and implementing solutions can help to guide the Town in developing plans that properly leverage systems' capabilities to address business challenges. An example of this would be the telephone and connectivity assessment work currently underway.

It is recommended that this hybrid approach continue to be considered in order to add new, temporary resources to the IT team.

# 7.0 Future Considerations

## 7.1 Digital Strategy

Moving forward, it will be important to continue to build on the momentum once the projects identified in this Master Plan are implemented.

The focus of the ITMP has been to review the current IT structure and foundations to identify what is needed to continue moving forward and to address most of these goals, however, there is the opportunity to further leverage technology and all that more current solutions have to offer, for both customer service delivery as well as for more informed and effective management decision-making.

The ITMP and roadmap will strengthen the technology foundations and help people leverage technology as they continue to improve service delivery. A Digital Strategy takes this to the next level. It rethinks government services for the 21st century by applying new ways of viewing services and applying techniques used by digital companies such as Amazon, Netflix and Uber to truly modernize services and leverage data.

Here are two quotes that characterize digital well:

> *"There is no difference between digital service delivery and service delivery. Today, everything is digital. If governments do not recognize this evolution, then any service strategy is flawed at the concept stage". Alex Benay, CIO Canada*

> *"Making an organization digital is first and foremost about reorienting ways of thinking and working. Without that, all tech, governance and business management decisions will not align to a truly 21st Century business model, but instead re-invent same 20th Century thinking". Dominic Campbell, CEO FutureGov*

Digital is a lot more than building a web app or an online service. It's about re-thinking services from the ground up and designing them to be digital by nature – not just mode of use. It's about looking at things from a totally different angle.

For instance, if housing affordability is a problem in a municipality, what does a digital solution to that problem look like? In one municipality, the focus has been on encouraging seniors and empty nesters to share their homes – by partnering, leveraging the community (the crowd) and its assets, promoting digital services provided by the private sector. So, the municipality hasn't built anything, but the solution to the challenge is inherently digital in approach.

This example illustrates a different way of thinking about a problem from a completely different perspective, using the mindset of digital (different business models, different modes of delivery) and putting the user / consumer of the service at the centre of its design.

Lessons learned during the pandemic have shown municipalities – and all levels of government – how to innovate quickly, how to deliver iteratively and launch without perfection, how to embrace change, and how to be more risk tolerant. These are all things to take forward and apply – post-pandemic – to the execution of this Plan as well as future projects – to tackle the big challenges, and to move at the speed necessary.

It is still important to ensure the foundational elements are built and maintained to support digital delivery before considering enhanced digital services.

# 8.0 Conclusion and Summary

Citizen demands for convenient digital services are increasing. Residents are able to perform many day-to-day transactions via the internet from anywhere, anytime in a convenient and user-friendly manner. They expect and demand that the Town also adhere to this new normal.

At the current stage, Collingwood's business processes are mostly dependent on different solutions, both digital and manual.

The Information Technology Master Plan is developed with the help of Town staff and leadership to enable such transformation. The Town should focus on the following five Focus Areas:

1. IT Infrastructure – Modern, Secure, Resilient and Interoperable.
2. Digital Customer Services.
3. Modernize and Automate Core Business Processes.
4. Give People the Tools They Need for a Modern Workplace.
5. Leverage the Full Power of GIS and Data.

By focusing on the above areas, the Town could expect the following benefits:

- Excellent customer service.
- Improved customer engagement.
- Improved service delivery timelines.
- Less duplicate data entry due to integrated systems.
- Addressing of resident concerns in a timely manner.
- Helping the environment.
- Reducing service delivery cost.
- Creating capacity.
- Increasing transparency.

- Reducing the number of complaints received by Council.
- Helping to make informed decisions.
- Increasing the accessibility and availability of services.

The ITMP has identified various initiatives as part of the Work Plan. The execution of these specific projects requires that the Town build an environment with the appropriate leadership, resources and monitoring mechanisms.

The following recommendations should be considered in order to mobilize the Strategy successfully.

- Implement a more effective IT Delivery Model.
- Change the focus and the capacity of the IT resources.
- Provide the capacity for additional resourcing opportunities.
- Implement a refreshed technology governance through the IT Steering Committee.
- Increase technology investment.

# Appendix 1 – Roadmap

Provided in separate document

# Appendix 2 – Sample Job Descriptions

## Applications Analyst

**POSITION SUMMARY:**

Under the direction of the Manager of IT, works in a team environment with other IT staff to maintain and support business solutions. Addresses problems with business solutions and provides resolutions, using their own skills and experience and working with business solutions vendors. Responsible for the installation and decommissioning of business solutions, and for the design of systems integration components and interfaces. The role is also responsible for the creation and maintenance of databases.

**QUALIFICATIONS:**

**Education, Certification & Licenses**

- College diploma or university degree (3 years) in the field of computer science or equivalent
- Recognized Solutions Analyst certification such as Associate Computing Professional (ACP)
- Must have a valid Ontario Class G driver's license and access to a reliable vehicle.

**Experience**

- Two to three years relevant work experience in a business solutions support role.
- Demonstrated experience and knowledge of business solutions.

**Required Skills & Competencies**

**Application Support:**

- Drafts and maintains procedures and documentation for applications support.
- Manages application enhancements to improve business performance.
- Advises on application security, licensing, upgrades, backups, and disaster recovery needs.
- Identifies and resolves issues with applications, ensuring that all requests for support are dealt with according to set standards and procedures.

**Systems Installation/Decommissioning:**

- Undertakes routine installations and de-installations of items of hardware and/or software.
- Takes action to ensure targets are met within established safety and quality procedures, including, where appropriate, handover to the client.
- Conducts tests of hardware and/or software using supplied test procedures and diagnostic tools.
- Corrects malfunctions, calling on other experienced colleagues and external resources if required.
- Documents details of all hardware/software items that have been installed and removed so that configuration management records can be updated.
- Provides assistance to users in a professional manner following agreed procedures for further help or escalation.
- Contributes to the development of installation procedures and standards.

**Database Administration**

- Develops and maintains procedures and documentation for databases.
- Identifies, evaluates and manages the adoption of appropriate database administration tools and processes, including automation.
- Contributes to the setting of standards for definition, security and integrity of database objects and ensures conformance to these standards.
- Manages database configuration including installing and upgrading software and maintaining relevant documentation.
- Monitors database activity and resource usage.
- Optimizes database performance and plans for forecast resource needs.

**Problem Management:**

- Initiates and monitors actions to investigate and resolve problems in business systems, processes and services.
- Determines problem fixes/remedies.
- Implements and assists with the implementation of agreed remedies and preventative measures.

**Systems Integration and Build:**

- Provides technical expertise to enable the configuration of software, other system components and equipment for systems testing.

- Collaborates with technical teams to develop and agree system integration plans and report on progress.
- Defines complex/new integration builds.
- Ensures that integration test environments are correctly configured, and designs, performs and reports results of tests of the integration build.
- Identifies and documents system integration components for recording in the configuration management system.
- Recommends and implements improvements to processes and tools.

**Software Configuration:**

- Configures software and equipment and tests platform-specific versions of one or more software products.
- Reports the outcome of testing and identifies potential improvements to the process and to the software products according to agreed designs and standards.

**Relationship Management:**

- Implements stakeholder engagement/communications plan.
- Deals with problems and issues, managing resolutions, corrective actions, lessons learned and the collection and dissemination of relevant information.
- Helps develop and enhance customer and stakeholder relationships.

**Other Skills & Abilities**

- Excellent interpersonal and relationship management skills combined with a customer service orientation.
- Proven analytical and decision-making skills to examine specialized and broad problems and develop solutions.
- Ability to effectively plan, coordinate, prioritize and execute tasks in a high-pressure environment.
- Good written and oral communication skills.
- Ability to listen intently and inquire.

- Ability to conduct research into technical issues and products.
- Ability to present ideas in business-friendly and user-friendly language.
- Highly self- motivated and directed as position requires initiative and independent thinking to respond to variables in a technical environment.
- Keen attention to detail for a role where quality assurance is important.
- Team-oriented and skilled in working within a collaborative environment.
- Integrity and discretion necessary to safeguard confidential data.

**LEGISLATIVE REQUIREMENTS:**

- Performs the responsibilities of the position within the legislative and regulatory standards set out in the applicable Federal and Provincial Legislation, and Municipal Acts and By-Laws. Performs the responsibilities of the position consistent with the Operational policies of the Municipality.
- Ensures a high level of respect for confidentiality for both the organization as a whole and staff as per the *Freedom of Information and Protection of Privacy Act (FIPPA).*
- Protects own health and health and safety of others by adopting safe work practices, reporting unsafe conditions immediately, and attending all relevant in-services regarding occupational health and safety. Follows all guidelines for employees and employers as legislated under the Ontario Health and Safety Act.
- As set out in the Municipality's Emergency Plan, perform duties upon the declaration of an emergency.

## Business Analyst

**POSITION SUMMARY:**

Under the direction of the Manager of IT, work in a team environment with other IT team and staff to analyze business requirements, present solutions and process improvements and manage projects to deliver solutions and improvements. Works closely with business units and key stakeholders to understand business needs and prepare business cases to define risks and benefits of proposed process improvements.

**QUALIFICATIONS:**

**Education, Certification & Licenses**

- College diploma or university degree (3 years) in the field of computer science or equivalent
- Recognized Project Management certification such as Project Management Professional (PMP)
- Recognized Business Analyst certification such as Certified Business Analysis Professional (CBAP)
- Must have a valid Ontario Class G driver's license and access to a reliable vehicle.

**Experience**

- Three to four years relevant and progressive work experience in a project management role
- Three to four years relevant and progressive work experience in a business analysis role
- Demonstrated experience managing projects.

**Required Skills & Competencies**

**Project Management**

- Takes full responsibility for the definition, documentation and successful completion of complex projects (typically with significant business, political, or high-profile impact, and high-risk dependencies). Identifies, assesses and manages risks to the success of the project.
- Ensures that realistic project plans are maintained and ensures regular and accurate communication with stakeholders.
- Adopts appropriate project management methods and tools.
- Ensures Quality reviews occur on schedule and according to procedure.

- Manages the change control procedure and ensures that project deliverables are completed within agreed cost, timescale and resource budgets, and are signed off.
- Provides effective leadership to the project team and takes appropriate action where team performance deviates from agreed tolerances.

**Business Analysis**

- Takes responsibility for investigative work to determine business requirements and specify effective business processes, through improvements in information systems, information management, practices, procedures, and organization change.
- Selects, adopts and adapts appropriate business analysis methods, tools and techniques, selecting appropriately.
- Collaborates with stakeholders at all levels, in the conduct of investigations for strategy studies, business requirements specifications and feasibility studies.
- Prepares business cases which define potential benefits, options for achieving these benefits through development of new or changed processes, and associated business risks.

**Requirements Definition and Management**

- Plans and drives scoping, requirements definition and prioritization activities for large, complex initiatives.
- Selects, adopts and adapts appropriate requirements definition and management methods, tools and techniques selecting appropriately from predictive (plan-driven) approaches or adaptive (iterative/agile) approaches.
- Obtains input from, and formal agreement to, requirements from a diverse range of stakeholders.
- Negotiates with stakeholders to manage competing priorities and conflicts. Establishes requirements baselines.
- Ensures changes to requirements are investigated and managed. Contributes to the development of organizational methods and standards.

**Business Risk Management**

- Carries out risk assessment within a defined functional or technical area of business.
- Uses consistent processes for identifying potential risk events, quantifying and documenting the probability of occurrence and the impact on the business.
- Refers to domain experts for guidance on specialized areas of risk, such as architecture and environment.

**Change Implementation Planning & Management**

- Creates the business readiness plan, taking into consideration IT deployment, data migration, capability deployment (training and engagement activities) and any business activities required to integrate new digital processes or jobs into the "business as usual" environment.
- Determines the readiness levels of business users with regard to upcoming changes; uncovers readiness gaps and creates and implements action plans to close the gaps prior to going live.
- Assists the user community in the provision of transition support and change planning and liaises with the project team.
- Monitors and reports progress on business readiness targets, business engagement activity, training design and deployment activities, key operational metrics and return to productivity measures.
- Defines the series and sequence of activities to bring stakeholders to the required level of commitment, prior to going live.

**User Experience Analysis**

- Identifies and describes the user objectives for systems, products and services.
- Identifies the roles of affected stakeholder groups.
- Defines the required behaviour and performance of the system, product or service in terms of the total user experience, resolving potential conflicts between differing user requirements.
- Specifies measurable criteria for the required usability and accessibility of the system, products and services.

**Relationship Management**

- Identifies the communications and relationship needs of stakeholder groups.
- Translates communications/stakeholder engagement strategies into specific activities and deliverables.
- Facilitates open communication and discussion between stakeholders, acting as a single point of contact by developing, maintaining and working to stakeholder engagement strategies and plans.
- Provides informed feedback to assess and promote understanding.
- Facilitates business decision-making processes.
- Captures and disseminates technical and business information.

**Other Skills & Abilities**

- Excellent interpersonal and relationship management skills combined with a customer service orientation.
- Proven analytical and decision-making skills to examine specialized and broad problems and develop solutions.
- Ability to effectively plan, coordinate, prioritize and execute tasks in a high-pressure environment.
- Good written and oral communication skills
- Ability to listen intently and inquire.
- Ability to conduct research into technical issues and products.
- Ability to present ideas in business-friendly and user-friendly language.
- Highly self-motivated and directed as position requires initiative and independent thinking to respond to variables in a technical environment.
- Keen attention to detail for a role where quality assurance is important.
- Team-oriented and skilled in working within a collaborative environment.
- Integrity and discretion necessary to safeguard confidential data.

**LEGISLATIVE REQUIREMENTS:**

- Performs the responsibilities of the position within the legislative and regulatory standards set out in the applicable Federal and Provincial Legislation, and Municipal Acts and By-Laws. Performs the responsibilities of the position consistent with the Operational policies of the Municipality.
- Ensures a high level of respect for confidentiality for both the organization as a whole and staff as per the *Freedom of Information and Protection of Privacy Act (FIPPA).*
- Protects own health and health and safety of others by adopting safe work practices, reporting unsafe conditions immediately, and attending all relevant in-services regarding occupational health and safety. Follows all guidelines for employees and employers as legislated under the Ontario Health and Safety Act.
- As set out in the Municipality's Emergency Plan, perform duties upon the declaration of an emergency.

# Appendix 3 – Glossary of Terms

| Term | Explanation |
|---|---|
| Agile | An iterative approach to project management and solution development |
| AODA | Accessibility for Ontarians with Disabilities Act – A law that sets out a process for developing and enforcing accessibility standards |
| AP | Accounts Payable – Invoice processing and payment |
| AR | Accounts Receivable – Invoice issuance and payment processing |
| ArcGIS | A family of client software, server software and online geographic information system (GIS) services developed and maintained by Esri, used to make maps, analyze data, and share and collaborate |
| As-Is | Current state – how a process currently operates before any changes or improvements; especially useful for helping people – who are NOT personally responsible for the work – understand how something is working |
| BA | Business Analyst – A person who analyzes and documents the market environment or business processes or systems |
| Back-office | An office or department where work is carried out to support the business of an organization, rather than being customer-facing |
| BCM | Business Continuity Management – a fulsome strategy that includes a BIA to help define RTOs for critical services, an RA to identify risks and vulnerabilities that may impact delivery of core services, a Crisis Management Team (a group of senior leaders who oversee the BCP), Tabletop Exercises to test, revise and improve plans, Disaster Management Processes for disaster recovery even recording and business resumption and a Cloud Governance Framework that provides direction regarding Cloud adoption within an organization |
| BCP | Business Continuity Plan – A document that outlines how a business will continue operating during an unplanned disruption in service |

| Term | Explanation |
|---|---|
| BCP/DR | Business Continuity Planning / Disaster Recovery – A set of policies, procedures and practices that are designed to assist an organization to recovery from a significant IT failure |
| BI | Business Intelligence – Refers to technologies, applications and practices for the collection, integration, analysis and reporting of business information, and is designed to support better business decision-making |
| BIA | Business Impact Assessment – An assessment that considers the potential impact of a disaster situation or loss of service on business operations, and dependencies that must be in place for the business operations to function |
| BPO/BSO | Business Process/Service Optimization methodology – A process review methodology developed and used by Perry Group |
| BPR | Business Process Re-engineering |
| BRM | Business Relationship Manager – Serve as translators for IT work and gather valuable intelligence that can improve how decisions are made regarding investments, resource allocation and strategic alignment |
| BYOD | Bring Your Own Device – A move toward staff using their own devices in place of City-provided devices |
| CAO | Chief Administrative Officer |
| CAPEX | Capital Expenditure |
| CIO | Chief Information Officer |
| CIRP | Cybersecurity Incident Response Plan |
| CITSP | Corporate Information Technology Strategic Plan |
| Cloud | A term used for IT infrastructure and services located outside of the corporate network and accessed over the internet |
| CoP | Community of Practice – A group of people who share a common concern, a set of problems, or an interest in a topic and who come together to fulfill both individual and group goals |

| Term | Explanation |
|---|---|
| COTS | Commercial Off-the-Shelf – A product that is used “as-is”; designed to be easily installed and to interoperate with existing system components |
| CRM | Customer Relationship Management – A generic system for case management that can be used for handling customer enquiries.<br>*Note that the C in CRM is used differently in many municipalities – Citizen, Client, Customer, and Constituent* |
| CRTC | Canada’s Radio-Television and Telecommunications Commission |
| CSR | Customer Service Representative |
| CTS | Cloud Telephony Services – The service works with an existing telephone service or replaces it outright and can be used with mobile phones, VoIP phones and landlines |
| Customer | Refers to users of the municipality’s technology and digital services, including residents, businesses, visitors, Mayor and Council, the workforce and our partners |
| CYOD | Choose Your Own Device |
| Data | Information in an electronic form that can be stored and used by a compute, typically collected to be examined and considered and used to inform and help decision-making |
| DCMS | Document and Content Management System – Used to classify, retain, and protect electronic information and supports versioning, collaboration, and workflows |
| Digital | Refers to a mindset, mode of operating, and delivery of services that takes advantage of modern technologies (web, app, social, mobile, data). These deliver improved experiences, business efficiencies and insights |
| Digital First | Engineering, architecture, platform, technology, content, experience, culture – all striving to reimagine and reset outdated business practices and conduct business in an online “anywhere, anytime” manner that takes full advantage of burgeoning technologies |

| Term | Explanation |
|---|---|
| Digitized | The automation of manual and paper-based processes, enabled by the digitization of information and workflows, moving from an analog (often paper-based) process to a computerized process |
| DOCS | Online word processor included as part of the free, web-based Google Docs Editors suite |
| DR | Disaster Recovery – A set of policies, procedures and practices that are designed to assist an organization recover from a significant IT failure |
| DRI | Directly Responsible Individual – The person ultimately accountable for a service, a product, or a project |
| DRP | Disaster Recovery Plan |
| DSbD | Digital Security by Design – To ensure security and privacy of software systems so users can use and trust technology |
| DSC | Digital Steering Committee |
| DSD | Digital Service Design – Perry Group methodology informed by Lean Six Sigma and Business Process Optimization/Re-engineering (BPO/BPR) experience and years of practical application, simplified into a 4-step process |
| DTGC | Digital and Technology Governance Committee – Corporate governance committee for information and technology decision-making |
| EA | Enterprise Architecture – A design/blueprint, processes, and associated standards for the technology environment |
| ECM | Enterprise Content Management – A system designed to provide enterprise-wide document and records management capabilities |
| ELA | Enterprise License Agreement |
| EMM | Enterprise Mobility Management – A set of technology and processes focused on mobile devices and services |

| Term | Explanation |
|---|---|
| EOL | End of life (i.e., software, hardware, equipment, etc. that is outdated or no longer supported) |
| Epics | An epic is a large body of work that can be broken down into a number of smaller stories |
| ERP | Enterprise Resource Planning – A system that is designed to address business requirements across the whole organization; to provide an integrated solution across many municipal departments and functions |
| Esri or ESRI | International supplier of geographic information system software, web GIS and geodatabase management applications |
| Experience | Refers to the overall experience of a person using a service, especially how easy or pleasing it is to use |
| FOI | Freedom of Information – Freedom of a person or people to publish and consume information. Access to information is the ability for an individual to seek, receive and impart information effectively |
| FTE | Full-Time Equivalent |
| GDS | Government Digital Service – UK government's central digital agency; a world leader in the modernization and digitization of government services |
| GIS | Geographical Information Systems – Systems designed to capture and report on all types of geographical data, including spatial data |
| GL | General Ledger |
| GM | General Manager |
| GP | Great Plains – A commonly-used finance and HR system |
| GPS | Global Position System – System for locating and tracking locations of things (vehicles, people, devices) |

| Term | Explanation |
|---|---|
| HCM | Human Capital Management – A corporate-wide system for managing the workforce and workforce management processes such as employee records, payroll, etc. |
| HR | Human Resources |
| HRIS | Human Resource Information System – Corporate-wide system for managing the human resource management processes such as employee records, training certifications, etc. |
| HRMS | Human Resources Management System – Corporate-wide system for managing the workforce |
| IA | Infrastructure Architecture – The hardware, software and other systems that comprise an organization's technology assets used to deliver IT services |
| ICCS | |
| IDTG | Information Digital and Technology Governance – Corporate governance committee for information, digital, and technology decision-making |
| Iframe | Inline Frame – An HTML document embedded inside another HTML document on a website (often used to insert content from another source, such as an advertisement, into a web page) |
| IM | Information Management |
| IoT | Internet of Things – Broad term used to describe internet (or network) connected devices, sensors, and controls |
| IP | Internet Protocol |
| IPS | Intrusion Prevention Systems – Technology to monitor networks for suspicious activity |
| IT | Information Technology |
| IT Service Catalogue | A comprehensive list of IT services that an organization offers to its employees and/or customers |
| ICCS | Institute for Citizen-Centred Service (Citizen First) – undertakes research to identify citizens' service needs and expectations and assists the public sector in identifying and applying innovative, best practice service solutions that support quality service across all channels |

| Term | Explanation |
|---|---|
| ITDS | IT and Digital Strategy |
| ITGC | Information Technology Governance Committee – Corporate governance committee for information and technology decision-making |
| ITGI | IT Governance Institute |
| ITIL | Information Technology Infrastructure Library – A set of detailed practices for delivering IT services |
| ITMP | IT Master Plan |
| ITS | IT Services (department/division) |
| ITSC | Information and Technology Steering Committee – Corporate governance committee for information and technology decision-making |
| ITSM | Information Technology Service Management – The standards and processes used to define how IT delivers services |
| ITSP | Information Technology Strategic Plan |
| Kanban | A lean scheduling system for minimizing work in progress |
| KB | Knowledge Base – A repository of knowledge articles that can have various staff and public audiences (multi-partition capabilities) based on criteria |
| KISS Principle | Keep It Simple, Stupid |
| KPI | Key Performance Indicator |
| LAN | Local Area Network – Internal private connectivity between municipal facilities and devices |
| LMS | Learning Management System – A digital learning environment that manages all aspects of a company's various training efforts |
| LPMS | Land and Property Management System – A Land, Planning, Permitting, and Licensing system (e.g., CityView) |

| Term | Explanation |
|---|---|
| M365 (formerly Office 365 or O365) | Microsoft Cloud-based office productivity suite which includes email and calendar, messaging, collaboration, and office suite |
| MDM | Mobile Device Management – the management of remote devices. |
| MFA | Multi-Factor Authentication |
| MFIPPA | Municipal Freedom of Information and Protection of Privacy Act |
| MIX | Municipal Innovation Exchange – A toolkit that helps local governments modernize public service through innovation |
| MoC | Members of Council |
| MOSA | Municipal Online Services Assessment – Perry Group's generalized assessment to articulate a target state for the digital experiences that municipalities could, and arguably should, deliver to citizens based on industry best practices |
| MSP | Managed Service Provider – IT outsource service provider |
| MTM | Municipal Technology Model – Perry Group's generalized architecture used for assessing municipal technology environments |
| MVP | Minimum Viable Product – The simplest, smallest solution that can be delivered to start to address the business requirement |
| NENA | National Emergency Number Association – an organization whose mission it is to foster the technological advancement, availability, and implementation of a universal emergency telephone number system |
| NG911 | Next Generation 911; enhancements to 911 services to a) move to digital and b) handle text messaging, multimedia and other |
| OKR | Objectives Key Results – A tool used to set and track achievement of objectives |
| OPEX | Operating Expenditure |

| Term | Explanation |
|---|---|
| PaaS | Platform as a Service – A complete development and deployment environment in the Cloud, with resources that enable you to deliver everything from simple Cloud-based apps to sophisticated, Cloud-enabled enterprise applications |
| PC | Personal Computer |
| PerfectMind | A membership management software that uses Cloud-based technology to help organizations connect with their communities |
| PGC | Perry Group Consulting |
| PIA | Privacy Impact Assessment – A decision tool used to identify and mitigate privacy risks that notifies the public about what personal information is being collected, why and how it will be used, accessed, shared, safeguarded, and stored |
| PIPEDA | Personal Information Protection and Electronic Documents Act – Sets out ground rules for how private sector organizations may collect, use, or disclose personal information in the course of commercial activities |
| PM | Project Manager – Someone who has responsibility for planning, procuring and executing a project, in any undertaking that has a defined scope, defined start and defined finish |
| PMO | Project Management Office – A group that defines and maintains project management standards for an organization (PMO-Lite is a less onerous version that still allows standards but is not as formal) |
| PowerBI | Connecting and visualizing data using a unified platform. |
| PPL | Planning, Permitting and Licensing |
| PPM | Project Portfolio Management – The centralized management of all projects, potential and existing, to facilitate resource management, project delivery and status reporting |

| Term | Explanation |
|---|---|
| Process Map | A process map is a planning and management tool that visually describes the flow of work and the series of events that produce an end result. A process map (also called a flowchart, process flowchart, process chart, functional process chart, functional flowchart, process model, workflow diagram, business flow diagram or process flow diagram) shows who and what is involved in a process and reveals areas where a process can / should be improved |
| Product Management | An organizational function that guides every step of a product's lifecycle — from development to positioning and pricing |
| PSTN | Public switched telephone network |
| QA | Quality Assurance |
| RA | Risk Assessment – To identify and analyze potential events that may have adverse impacts and to determine ways to eliminate the event or control the risk where the event cannot be avoided |
| RASCI | Responsible, Accountable, Support, Consulted, Informed. Common framework for defining project responsibilities |
| RFP | Request for Proposal – A business document that announces a project, describes it and solicits bids from qualified contractors to complete it |
| RICE | Reach, Impact, Confidence, Effort |
| Risk Register | Used to identify, log, and track potential risks, the nature of each risk and measures that would mitigate the risk |
| RFP | Request for Proposal – A business document that announces a project, describes it and solicits bids from qualified contractors to complete it |
| ROI | Return on Investment – A performance measure used to evaluate the efficiency or profitability of an investment |
| RPO | Recovery Point Objective – Refers to the amount of data at risk (that could be lost) after a failure or disaster occurs; the maximum amount of lost data – measured in time – from a failure occurrence to the last valid backup |

| Term | Explanation |
|---|---|
| RTO | Recovery Time Objective – The maximum tolerable length of time that a computer, system, network, or application can be down after a failure or disaster occurs (i.e., how long it takes to restore to normal operations) |
| SaaS | Software as a Service – A way of delivering applications over the Internet – as a service, instead of installing and maintaining software |
| SAML | Security Assertion Markup Language – An XML-based markup language used to exchange authentication and authorization data between parties, in particular, between an identity provider and a service provider |
| SAN | Storage Area Network – A dedicated high-speed device that interconnects and presents shared pools of storage devices to multiple servers |
| SAP | A commonly-used ERP application |
| SCADA | Supervisory Control and Data Acquisition – a computer-based system for gathering and analyzing real-time data to monitor and control equipment that deals with critical and time-sensitive materials or events. |
| SCOR | Perry Group's version of SWOT – Strengths, Challenges, Opportunities, Risks |
| Scorecard | A statistical method of measuring achievement or progress toward a particular goal |
| Scrum | A framework for project management that emphasizes teamwork, accountability, and iterative progress toward a well-defined goal |
| SDAF | Streamline Development Approvals Fund – provincial grant program |
| SIP | Session Initiation Protocol trunking is a service offered by communications service providers that uses the protocol to provision voiceover IP (VoIP) connectivity between an on-premise phone system and the public switched telephone network (PSTN) |
| SLA | Service Level Agreement – Documented target levels of service (e.g., response and resolution timelines for incidents) |
| SME | Subject matter expert |

| Term | Explanation |
|---|---|
| SMS | Short Messaging System – Cell-phone-based text messaging |
| SMT | Senior Management Team |
| SOP | Standard Operating Procedure – Guidelines as to how to complete a procedure |
| Sprint | Sprints are time-boxed periods of one week to one month, during which a product owner, scrum master, and scrum team work to complete a specific product addition. During a sprint, work is done to create new features based on the user stories and backlog. A new sprint starts immediately after the current sprint ends |
| SQL | Structured Query Language – A database query language |
| SR | Service Request – A formal request from a user for something new to be provided |
| SSO | Single Sign On – A session and user authentication service that permits a user to use one set of login credentials |
| SSRS | SQL Server Reporting Services |
| SWOT | Strengths, Weaknesses, Opportunities, Threats – A common assessment tool for reviewing a situation |
| Tabletop Exercise Framework | The approach for discussing, determining, and assigning emergency management roles and required responses in simulated emergency scenarios |
| TBD | To be determined |
| TCO | Total Cost of Ownership |
| Technology | A short form for Information Technology (IT), it is the use of computers and computing systems to store, retrieve, transmit, process and manipulate data or information |
| To-Be | Future state – visual depiction of proposed changes and improvements to a current process or workflow; helps people understand the impact of the changes – to internal people, process, and technologies as well as external customers – before implementation |

| Term | Explanation |
|---|---|
| TOGAF | The Open Group Architecture Framework (TOGAF) is an enterprise architecture methodology that offers a high-level framework for enterprise software development. |
| Tombstone data | Term for the standardized/descriptive data on facilities, sites, assets, or records; static data that should be reused |
| TOMRMS | The Ontario Municipal Records Management System – file classification and records management standard |
| TOR | Terms of Reference |
| TPI | Telephony Platform Installation |
| UC | Unified Communication – Integration of enterprise communication services |
| UI | User Interface |
| UX | User Experience – Encompasses all aspects of the end user's interaction with the company, its services, and its products |
| UXD | User Experience Design – A design process whose sole objective is to design a system that offers a great experience to its users |
| VoIP | Voice Over Internet Protocol – Modern telephony systems sharing computer networks |
| VoR | Vendor of Record – A procurement arrangement, typically established through an RFP, which authorizes one or more qualified vendors to provide goods/services to one or more organizations for a defined period on terms and conditions, including pricing, as set out in the VoR agreement |
| VPN | Virtual Private Network – A secure method for connecting remotely to municipal technology resources; used by remote workers and partners |
| VR/AR | Virtual Reality and Augmented Reality – systems used to simulate a situation |
| VxRail | Hyper-converged virtualization solution for simplifying management of data centre technology |

| Term | Explanation |
|---|---|
| WAM | Work and Asset Management System |
| WAN | Wide Area Network – A collection of local area networks (LANs) or other networks that communicate with one another. A WAN is essentially a network of networks, with the Internet the world's largest WAN |
| WFH | Work from Home |
| Wi-Fi | A wireless networking technology that uses radio waves to provide wireless high-speed internet access |
| WMS | Work Management System – The system used for managing an organization's work orders |

# Appendix 4 – Table of Figures

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