



IT and Business Application Software (BAS) Review

Final Report

April 2023



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Version History

Version #	Date	Prepared By	Prepared For	Comments
1	Dec 14, 2022	Ben Perry, Nasir Kenea, Prasanna Gunasekera, Natasha Singh	Haldimand County Senior Management Team (SMT)	First draft Report
2	Jan 15, 2023	Ben Perry	Haldimand County Senior Management Team (SMT)	Incorporates minor corrections
3	Mar 5, 2023	Ben Perry	Haldimand County Senior Management Team (SMT)	Final draft that incorporates feedback from SMT
4	Mar 8, 2023	Ben Perry	Haldimand County Senior Management Team (SMT)	Minor revisions
5	Apr 6, 2023	Ben Perry	Final Report	Final revision

1.0 Introduction and Approach to Review

1.1 Introduction and Context

Perry Group is a technology and service modernization management consulting firm focused on the municipal sector. The firm previously worked with the County in 2020, conducting an IT Review and completing Business Process Optimization Reviews for 15 services.

At that time, Perry Group provided a series of recommendations in relation to IT organization and management practices, along with a recommended set of seven optimization projects for consideration by the Administration and Council.

Since that time, the County has worked on the implementation of some of the recommendations, notwithstanding the impacts of the Covid-19 pandemic.

In 2022, the County asked Perry Group for some further help. The BAS (Business Application Software) project has become a significant resource drain for the organization. There are needs for many other technology initiatives across the organization, but key Innovation and Technology Services (ITS) staff are tied up on the BAS initiative. Understandably, there is a desire to wrap up and operationalize the BAS work into a steady state, so that staff can be released to work on other priorities.

Perry Group was asked to look at both the ITS organization and the BAS work and identify recommendations for operationalizing BAS, assessing progress on our previous recommendations, and making any further recommendations necessary to continue to evolve the County's technology management and utilization practices.

1.2 Participation

Perry Group worked with senior staff, including the CAO, GM of Finance and ITS, GM of Engineering and Capital Works, and the Director of Human Resources (HR) specifically to understand the situation, as well as with the ITS Management team.

Our information-gathering encompassed the following activities:

- Briefings with senior staff and project sponsors.
- All staff survey – broad input on technology services and solutions.

- Interviews with BAS project team members.
- Working sessions with BAS stakeholders.
- Interviews with ITS leadership and staff.
- Roundtable discussion with SMT.

We worked with Senior Leaders to review our observations and share our recommendations before this draft Report was authored.

2.0 Current State Summary

2.1 IT Review

As noted, Perry Group previously conducted an IT Review and provided recommendations around the future needs and strategy for resourcing the then “Information Services (IS) team”. The following sections provide the results of our assessment of the progress that has been made against those recommendations as well as feedback from a staff survey and SMT discussions.

2.1.1 Consulting Team Assessment of Progress Against 2020 IT Recommendations

Through interviews and document review, the consulting team independently verified progress against the 2020 recommendations. In the following sections, recommendations from the 2020 Review are identified/listed below, followed by the consulting team’s commentary and assessment of progress.

Organizational Change

A series of organizational changes were recommended in the earlier Report, regarding the positioning of the IS division.

Our Recommendation (2020)

Reposition the IS Division to become a strategic partner, renaming the Division to signify the change, and also re-conceptualizing the IT Manager to a more strategic role (similar to a Chief Information Officer role).

Our Assessment of Progress (2022)

There has been some limited progress made in this area, mainly in recognition of the greater role the division can play in the organization. The division has been renamed to “Innovation and Technology Services” to denote a changed role, however, ongoing time commitments to the BAS project of members of the Business Solutions team is restricting ITS’s ability to meet with business units and develop ideas, plans and roadmaps.

SMT identified an improvement in the approach from ITS and the move toward to a more solutions-oriented team. However, there is still more work to be done to reposition the IT Manager as a CIO for the organization, and to

formalize the role in a way that its strategic value is realized at the senior management table. Specifically, including the IT Manager in regular SMT meetings may be a desired future goal.

Our Recommendation (2020)

Implement functional organization changes within IT to establish a stronger IT management team and well-defined teams with clear responsibilities and accountabilities. The IT Division will contain three teams, two teams each managed by a Supervisor while the third team is led by the Senior Service Desk Analyst. Reorganize existing roles, with new job descriptions and reporting relationships.

The following was the target organization structure, recommended by Perry Group.

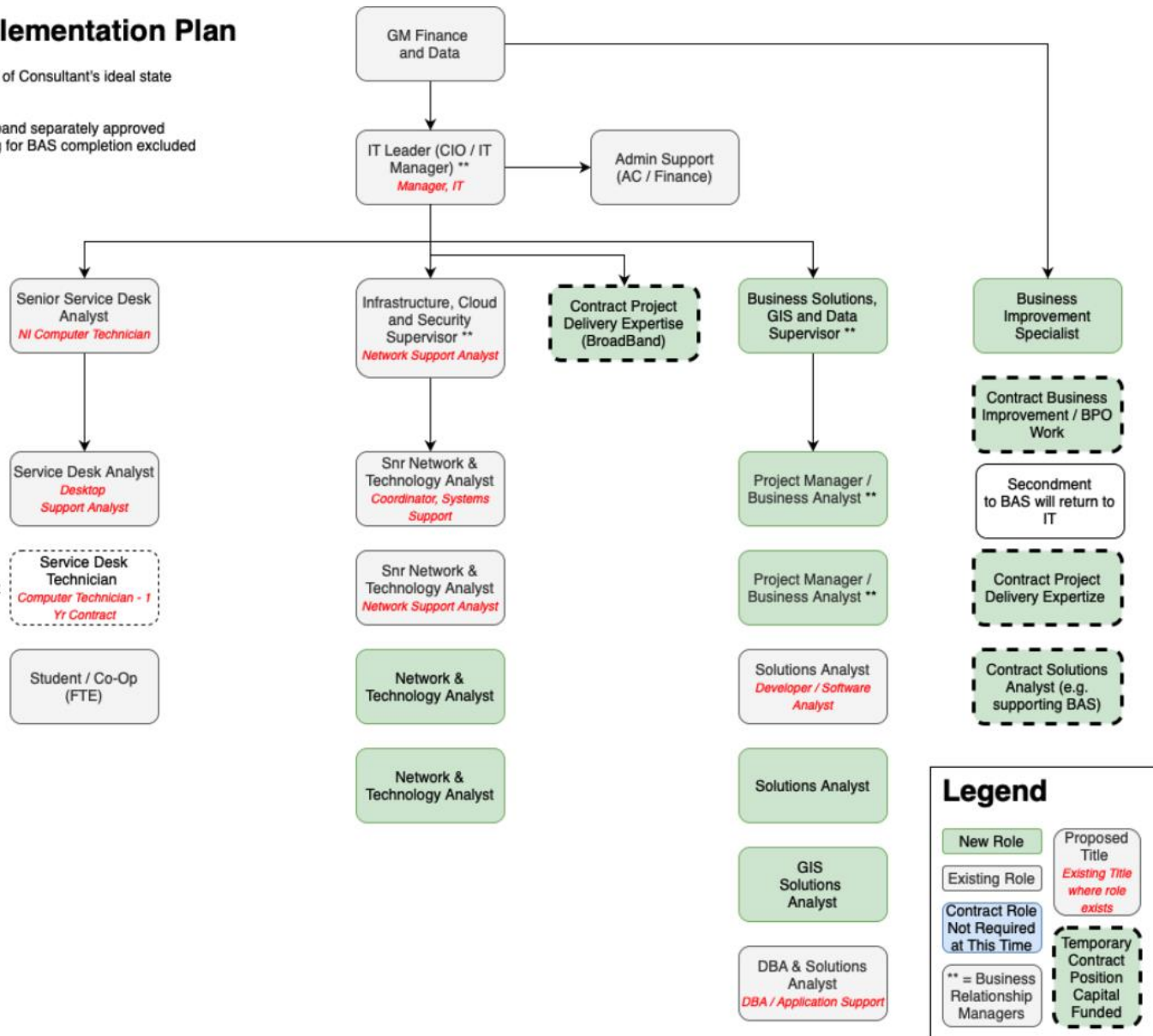
County Implementation Plan

Practical implementation of Consultant's ideal state

Assumptions:

- Contract PM for Broadband separately approved
- Funding and resourcing for BAS completion excluded

We have determined this contract role is not a priority requirement



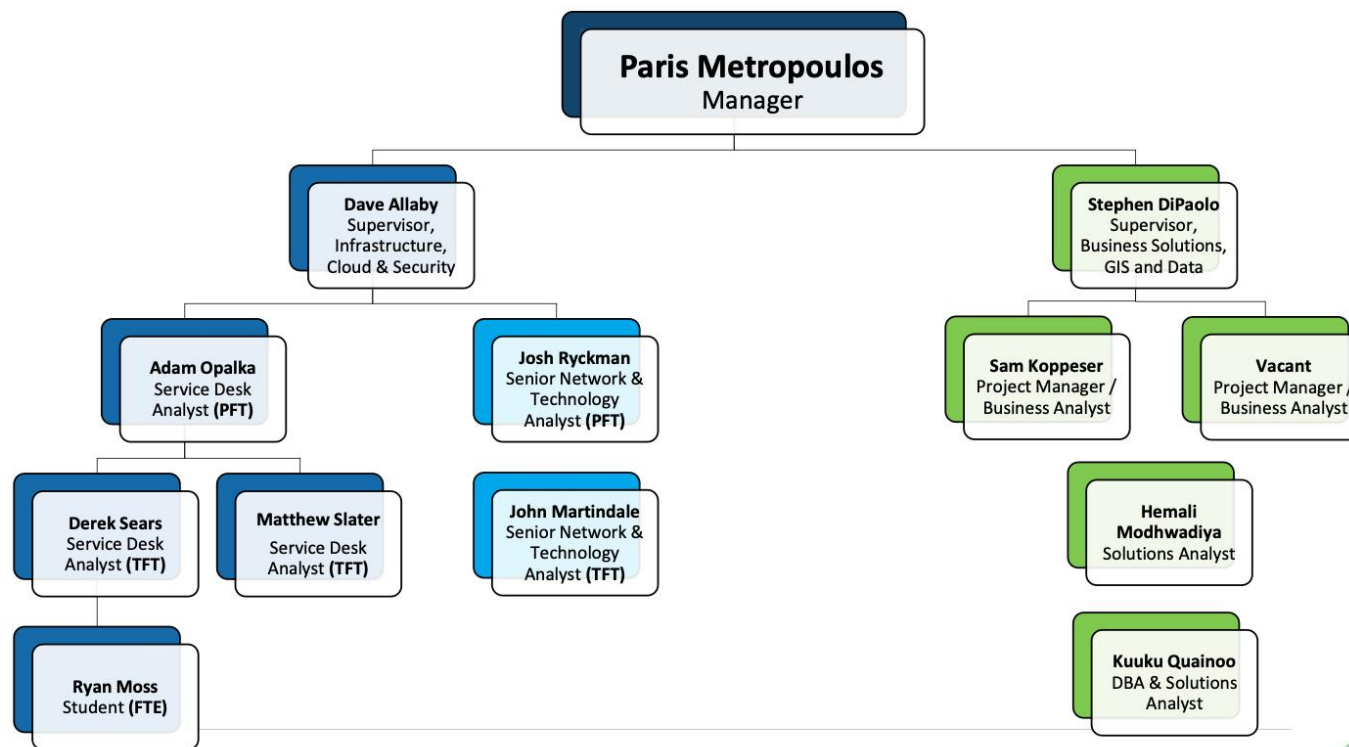
The following role changes were also recommended:

Current	Proposed
Network Infrastructure Computer Technician	Senior Service Desk Analyst
Desktop Support Analyst	Service Desk Analyst
Network Supervisor Analyst	Infrastructure, Cloud and Security Supervisor
Coordinator Systems Support	Senior Network and Technology Analyst
Network Support Analyst	Senior Network and Technology Analyst
Developer / Software Analyst	Solutions Analyst
Database Administration / Application Support	Database Administration and Solutions Analyst

Our Assessment of Progress (2022)

The proposed structure was presented to Council and endorsement in principle was received. The County chose to adapt the model to a two-team approach, rather than three, which is reasonable given resource constraints.

The current IT organization model in place at the County is presented below.



The recommendation to establish a CIO-type role to lead the IT has not yet been implemented, with the current incumbent in the IT Manager role, on contract until October 2023.

As per the agreed strategy, two teams have been established. One team is led by a newly-created Supervisor, Infrastructure, Cloud and Security role (filled by Dave Allaby), and the Service Desk function has been folded into this group to reduce the need for an additional supervisor.

The Business Solutions, GIS and Data Supervisor position (filled by Cheryl Judson permanently, back-filled by Stephen DiPaolo during her secondment to BAS) has been created to establish the second team, and this role has been filled internally.

The following table identifies the role changes that have been implemented. For each of these roles, new job descriptions are in place and have been rated, and this is providing appropriate market-based salaries and suitable progression opportunities within the team.

Current	Proposed	Change Made
Network Infrastructure Computer Technician	Senior Service Desk Analyst	Yes, contract position. Incumbent is currently on leave – role is back-filled by Derek Sears.
Desktop Support Analyst	Service Desk Analyst	Yes, contract position. Adam Opalka is the permanent incumbent in this role and is currently seconded to back-fill role.
Network Supervisor Analyst	Infrastructure, Cloud and Security Supervisor	Yes, Dave Allaby
Coordinator Systems Support	Senior Network and Technology Analyst	Yes, Josh Ryckman
Network Support Analyst	Senior Network and Technology Analyst	Yes, contract position. Incumbent is currently on leave – role is back-filled by John Martindale.
Developer / Software Analyst	Solutions Analyst	Yes, permanent position. Hemali Modhwadiya is currently partially seconded to BAS
Database Administration / Application Support	Database Administration and Solutions Analyst	Yes, Kuuku Quainoo

The feedback from the ITS Management team suggests that the organization structure changes have been universally positive, and that they have helped to clarify roles, responsibilities and accountabilities. The establishment of a true Service Desk – with the supporting processes and technology to manage the service – has had a transformative effect on service. This, plus the clarity in structure, has given the team time to work on process improvements that have further improved the efficient running of the whole team – a virtuous circle.

One point of concern is the number of contracted staff in key positions. For various reasons (including long-term illness), staff filling important roles are on contract. This includes the Manager of IT, for which the current contract ends in October 2023. For the long-term stability of the team, it would be advisable to move toward making these individuals permanent, where possible and appropriate.

In addition to changes to existing roles, several position additions were also recommended.

Our Recommendation (2020)

Hiring new IT resources with a preliminary focus on building a high-performing Business Solutions, GIS and Data team and starting to build stronger business relationships between IT and business units, helping to translate ideas into realistic and achievable projects.

The following new roles were recommended – three positions for 2021:

Year	Role
2021	Business Solution, GIS and Data Supervisor
2021	Project Manager / Business Analyst
2021	Solutions Analyst

Our Assessment of Progress (2022)

As per the original report from County staff to council in 2020, three new roles were to be phased in over 2 years (2021 – 2022). Three roles have been created and hired by the County.

Year	Role	In Position
2021	Business Solution, GIS and Data Supervisor	Yes, permanent position. Cheryl Judson – currently fully seconded to BAS.
2022	Project Manager / Business Analyst	Yes, permanent position, filled by existing staff member Stephen DiPaolo, currently backfilling seconded (Cheryl Judson) Supervisor role

2021	Project Manager/Business Analyst ¹	Yes, permanent position – filled by Sam Koppeser , who is primarily allocated to BAS project.
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For each of these three positions, the County hired from within – a positive story of internal growth and career progression.

However, the new roles identified in the table above – and central to the creation of the new Business Solutions team – are currently fully or largely allocated to the BAS project. As a result, there has been no tangible increase in resource capacity in the Business Solutions team, or truly in the BAS project.

Our Recommendation (2020)

Augment internal IT and business resources by including contract and backfill staffing costs in capital project requests and adding contract project management positions to support Broadband and BAS project delivery. Although not explicitly referenced as a recommendation – the organization diagrams (p.66) identified the intent to contract in project delivery expertise and Solutions Analyst expertise into the BAS project, with the then seconded IT resource expected to return to the IT Division.

We also recommended that the County progressively add new resources to the IT Division over the next 3 years to address gaps in capacity and capability in Project Management / Business Analyst, Solutions Analyst, GIS Solutions Analyst and Network and Technology Analyst roles.

Our Assessment of Progress (2022)

In terms of contract project staffing, the Broadband Project Manager identified previously was not required due to the cancellation of the Broadband program.

In practice, the BAS project has not added contract resources, with the County using permanent internal staffing rather than contract staffing to resource the project. Note that, since our 2020 Review, the project has assigned the following roles to the BAS initiative:

- Project Manager (Cheryl).
- Solutions Analyst (Hemali).

¹ Perry Group's recommendation was for a Solutions Analyst role, the County determined a Project Manager/Business Analyst role was more suitable in 2022.

- Project Manager/Business Analysts (Stephen), currently backfilling Supervisor role.
- Seconded Project Manager/Business Analysts (Sam).
- Seconded HR Specialist (Heather).
- Temporary Service Desk Analysts (Matt) – on contract until April 23, 2023

4 positions (2 from IT and 2 from HR) are funded from the BAS project until April 23, 2023, However, in practice these positions are not fully dedicated to the BAS project. For the IT roles specifically, day-to-day IT support functions and others demands means that work on BAS must be balanced with other duties. In some sense then, the BAS project continues to run off the side of the desk, rather than with a dedicated project team.

Budgeting for contract staff as part of project budgets does not appear to have been established as a standard practice. The consulting team continues to recommend the practice to the County for technology initiatives going forward.

To be successful, it is critical that technology transformation projects are adequately resourced. The County must learn this important lesson and ensure that future initiatives are resourced with the right people, with the right skills to set them up for success.

At the time of the original assessment in 2020, the following four IT positions were identified as anticipated future needs (for consideration after 2022) but were not prioritized by the consulting team at the time, to respect the fact that needs and priorities could change.

Year	Role	In Position
TBC	GIS Solutions Analyst	No
TBC	Network and Technology Analyst	No
TBC	Solutions Analyst (Project Manager / Business Analyst) ²	No
TBC	Network and Technology Analyst	No

² Given that the County opted to hire in 2022 a Project Manager/Business Analyst position, instead of the Solutions Analyst, the need here is for a solutions analyst.

At this stage, as per the County's plan, none of these positions has yet been created or filled – and the County is looking to Perry Group review and re-confirm the priority order of any position needs.

In reviewing the recommendations in light of the current situation, the consulting team still sees the strong need for the addition of the roles previously identified in 2020.

We believe there is a strongest case at this time for an additional **Solutions Analyst** to provide the necessary immediate project and ongoing support and ability to operationalize the business solutions being implemented as part of BAS.

We also believe that one of the proposed **Network and Technology Analysts** would be the next critical hire. The County may wish to review whether it is most suitable to hire at this level, or whether a Senior Network and Technology Analyst would be more appropriate.

Thus, as it stands, the next set of recommended resource priorities, presented in priority order would be:

1. Solutions Analyst.
2. Network and Technology Analyst.
3. GIS Solutions Analyst or Solutions Analyst (Perry Group originally recommended a GIS Solutions position, due to the importance of GIS and its centrality to municipal Work and Assets, as well as Planning, Permitting and Licensing functions. The County may determine that a Solutions Analyst, over a GIS Solutions Analyst may be more critical)
4. Network and Technology Analyst.

Note that these are permanent positions recommended by the consulting team. Further contract resources are required to support our BAS recommendations, and these are discussed in future sections.

Set IT Strategy

Our Recommendation (2020)

It is recommended that the County embark on creating the following strategies and plans:

- Corporate Digital, Innovation and Technology Strategic Plan
- GIS Strategy

- CRM Strategy

Our Assessment of Progress (2022)

The County has not yet established formal strategies in these three areas, although we understand work is underway around Customer Service Strategy.

We strongly reiterate the importance of establishing a long-term Technology Strategic Plan as a foundational piece of work to lay out the key technology work ahead, alongside the appropriate resource needs over the next 3-5 years.

Project Governance

Our Recommendation (2020)

The County should continue with the implementation of the major technology projects underway – BAS and CityView for example – ensuring that the correct project governance and project resources are available to each of the projects to implement successfully.

Our Assessment of Progress (2022)

The CityView project is now substantially complete (there are a small number of outstanding issues to resolve) and has been deemed successful by the key stakeholders – although the dissatisfaction with the system flagged by survey responses does warrant investigation.

Nonetheless, this is a positive outcome that should be appropriately celebrated. It has enabled back-office staff efficiencies, digitization of inspector activities, while enabling improved customer service (by allowing customers to apply and track their development, permitting and licensing applications online).

For the BAS project, following the recommendations of the 2020 Review, a dedicated Project Manager and supporting business solution resources were formally assigned to the project. A Steering Committee of key stakeholders was also established.

There is broad agreement that, despite the problems that the BAS project has faced, this has improved communication and demonstrated the value of such structures to improve project management. This should be a key takeaway for the County and a practice that must be employed in future projects.

Cybersecurity and Business Continuity

Our Recommendation (2020)

In light of the many examples of cyber-attacks as well as the Municipal Emergency Planning requirements, the County needs to develop a formal Security Plan and Business Continuity/Disaster Recovery Strategy.

Our Assessment of Progress (2022)

While the County has undertaken a range of cybersecurity measures (including establishing ongoing annual funding for external testing), training and other improvements (which are positives), there is no current formalized Security Plan or Business Continuity / Disaster Recovery Plan or Strategy in place at this time. We understand that there is a funded capital project in 2023 which is intended to tackle these areas.

We reiterate that these are important strategies/plans and we would encourage the County to engage third party assistance to accelerate this work.

Establish Effective Corporate IT Governance

Our Recommendation (2020)

The County should improve its oversight, coordination and focus on the technology program, ensuring that resources (funds, people) are allocated to those activities that will have the highest value impact, and that the initiatives that are undertaken deliver on expected outcomes. The County should:

- a. Implement a new Governance model that engages leadership, management, and IT in steering the technology program, setting investment priorities, and monitoring the delivery of the program.
- b. Implement policies and processes to improve the rigour by which technology ideas are conceptualized, planned, funded, and executed.
- c. Improve project delivery outcomes through the adoption of project management best practices.
- d. Improve project portfolio reporting to monitor the delivery of projects more effectively within the technology program.
- e. Implement key performance indicators (KPIs) to monitor the quality and performance of IT service delivery.

Our Assessment of Progress (2022)

The County has developed an IT Governance Framework that has been approved by SMT.

SMT has been established as the IT Governance Body, and an IT Working Group (with representatives from IT and business units) has been established. A Terms Of Reference (TOR) for each group has been prepared. Both groups have only met sporadically over the past year and have not yet established a regular cadence for meetings.

A methodology for project opportunity identification (a tech solution request), intake, assessment and prioritization has been defined and is being deployed to support the 2023 budget process.

These are positive steps forward.

Next, the County needs to establish a more frequent and consistent schedule for IT Governance meetings and begin to build the muscle of using the Governance model.

The introduction of standardized project portfolio reporting alongside consistent project management, reporting methods, and KPIs will be of value as the governance matures.

Our Recommendation (2020)

Our assessment of the Business Process Optimization at the County in 2020 included 15 key business processes.

The Review considered the volume of transactions, ease of implementation, financial benefits, return on investment and overall value-add to provide efficient services to citizens that led to a four-year prioritized implementation roadmap.

We identified seven processes where there was a clear business case for improvement through the application of technology.

Our recommendation for the first two years was focused on the implementation of three capabilities: Customer Request Management Workflow, Invoice Request Workflow, and Parking Ticket Tracking in order of priority.

The project cost breakdown was also provided to help the County be ready to advance the recommendation. We also emphasized the need for project governance, resourcing, business systems architecture, and digitization of business processes for the successful implementation of these capabilities.

In addition, it was recommended that digitization of business processes wherever possible and to avoid running manual processes in parallel. This also requires the integration of online services as shown in the table below to be pursued.

Our Assessment of Progress (2022)

The table below identifies progress on the recommendations.

Year	Business Process	Work Begun	Work Complete
Year 1 (2021)	Customer Request Management workflow	No	No
Year 2 (2022)	Invoice Request Form workflow (Misc. Accounts Receivable Invoicing)	No	No
	Parking Ticket Tracking (issuance to plate denial)	No	No

Year 3 (2023)	Community Guide Process (design, print and distribution)	Yes	Yes
	On-line Tax Inquiry, On-line Tax Certificates and Tax/Accounts Receivable Bill Distribution	Yes	Yes
Year 4 (2024)	Road Damage Deposits	No	No
	Library Fines and Returns	No	No

For various reasons – not the least of which, the Covid-19 pandemic alongside resource limitations in ITS and business units – the three capabilities identified to provide the most value to the County have not yet been implemented.

Since 2020, the County has implemented two business process optimization projects – Online Tax (includes, inquiry for property owners, general assessment information for the public, on-line Tax Certificates and electronic bill distribution for tax and accounts receivable) and the Digital Community Guide Process (design, print and distribution) – which were recommended for Year 3. This is a positive step in each of these areas. We note that both initiatives were actively led and partially resourced by 3rd parties external to the County. This links to our earlier comments about contracting expertise and resources and should be a pointer to a successful pattern that the County could use to execute projects more effectively in future.

With the assessment of our previous recommendations completed, our attention turned next to consulting more broadly with staff and management at the County.

2.1.2 Staff Survey Results

A staff satisfaction survey was conducted as part of this assessment using the same set of questions that was used in 2020 to allow for comparison and trends analysis. The results of the 2020 and 2022 surveys have been shared with the County.

The overall participation was comparable to that of 2020, with a good cross section of management and employees taking part. This time around, there is a larger ratio of new employees that participated as compared to the previous survey. Overall, most staff are satisfied with the core support and technologies that ITS provides but there are key issues that can be clearly seen in the results.

IT Tools

Email, calendar, and access to the internet continue to meet expectations with >85% satisfaction. This is good news.

This time, access to the network also meets expectations but there are still many users who have significant issues with this service.

Remote access satisfaction improved marginally, but staff are still not entirely satisfied with the solution.

PC/Laptop/2-in-1 is the service with the most dissatisfaction in the County. Adobe document management (running through Citrix), printers/copiers/scanners and network performance are the group of services with lower satisfaction, and softphone phone audio quality is worth investigating.

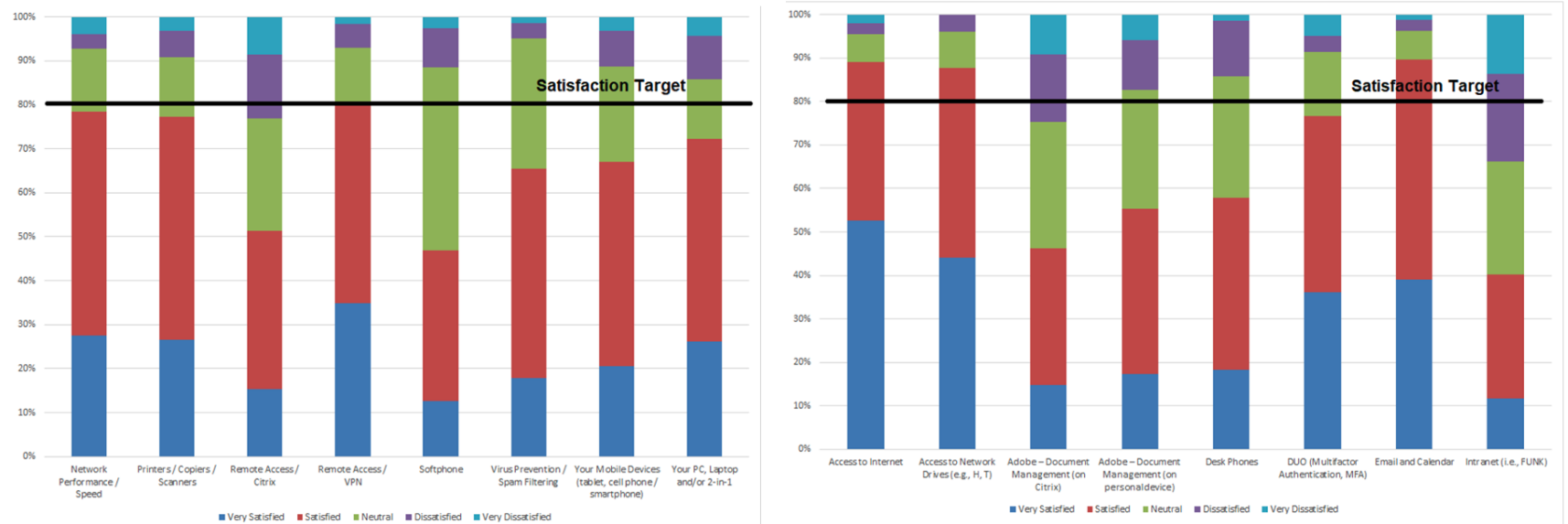


Figure 1: Staff Survey Results – IT Tools

These issues may be location-based or impacted by existing infrastructure, but each of them should be further investigated and addressed as they are foundational to the County's day-to-day business operation.

Below are some core services in order of satisfaction and dissatisfaction:

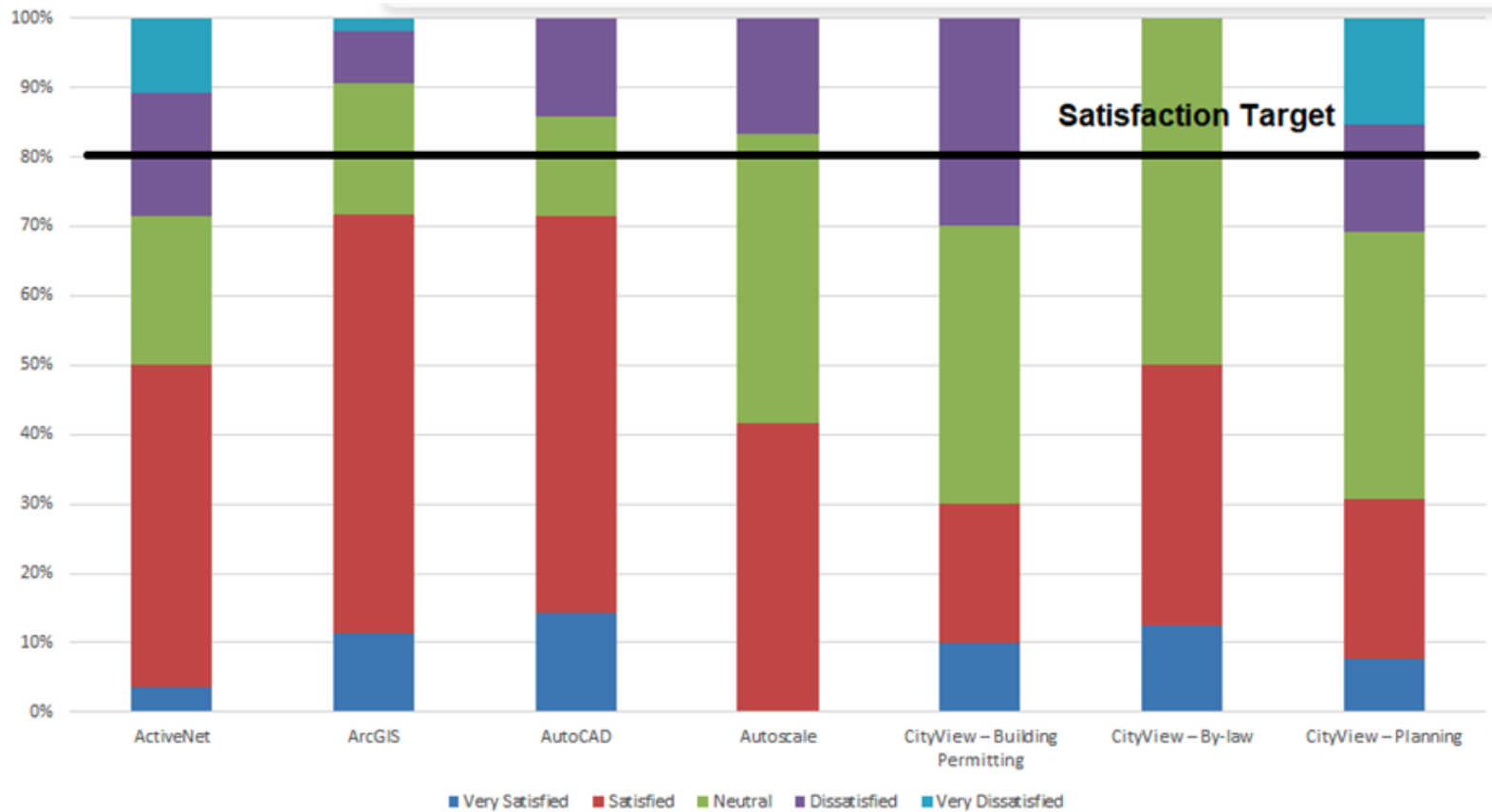
Core Service	Order of Satisfaction	Core Service	Order of DISSatisfaction
Email and Calendar	90%	Your PC, Laptop and/or 2-in-1	34%
Access to Internet	89%	Access to Network Drives (e.g., H, T)	19%
Access to Network Drives (e.g., H, T)	87%	Adobe – Document Management (on <u>personal device</u>)	17%
Network Performance / Speed	78%	Printers / Copiers / Scanners	14%
Printers / Copiers / Scanners	77%	Network Performance / Speed	13%
DUO (Multifactor Authentication, MFA)	71%	Softphone	13%
Remote Access / VPN	67%	Desk Phones	9%
Your PC, Laptop and/or 2-in-1	66%	DUO (Multifactor Authentication, MFA)	8%
Virus Prevention / Spam Filtering	61%	Virus Prevention / Spam Filtering	7%
Desk Phones	55%	Adobe – Document Management (on Citrix)	7%
Adobe – Document Management (on <u>personal device</u>)	43%	Your Mobile Devices (tablet, cell phone / smartphone)	6%
Your Mobile Devices (tablet, cell phone / smartphone)	42%	Intranet (i.e., FUNK)	6%
Intranet (i.e., FUNK)	40%	Remote Access / Citrix	5%
Remote Access / Citrix	39%	Email and Calendar	4%
Adobe – Document Management (on Citrix)	36%	Access to Internet	4%
Softphone	25%	Remote Access / VPN	4%

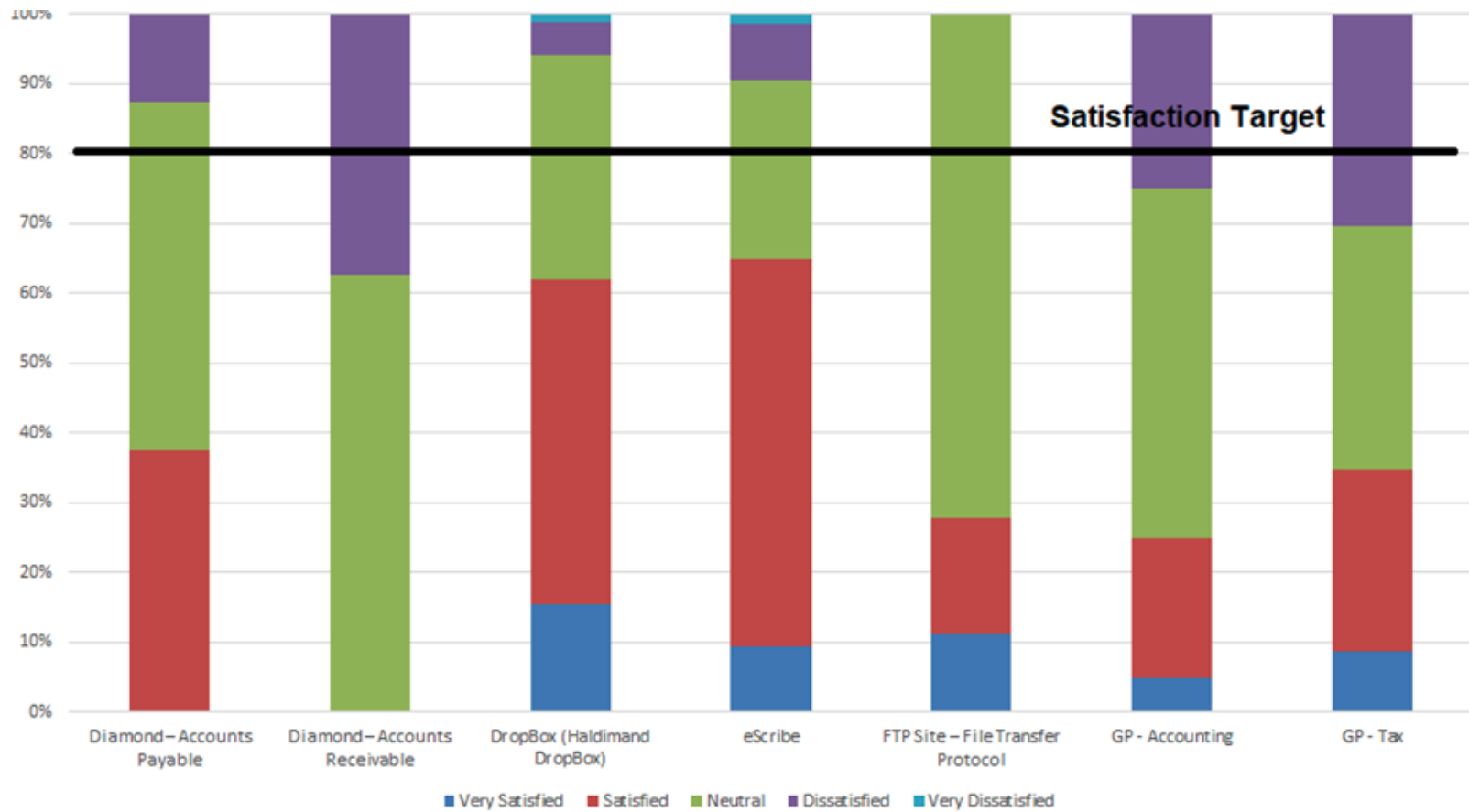
Figure 2: Staff Survey Results – Core Services Satisfaction

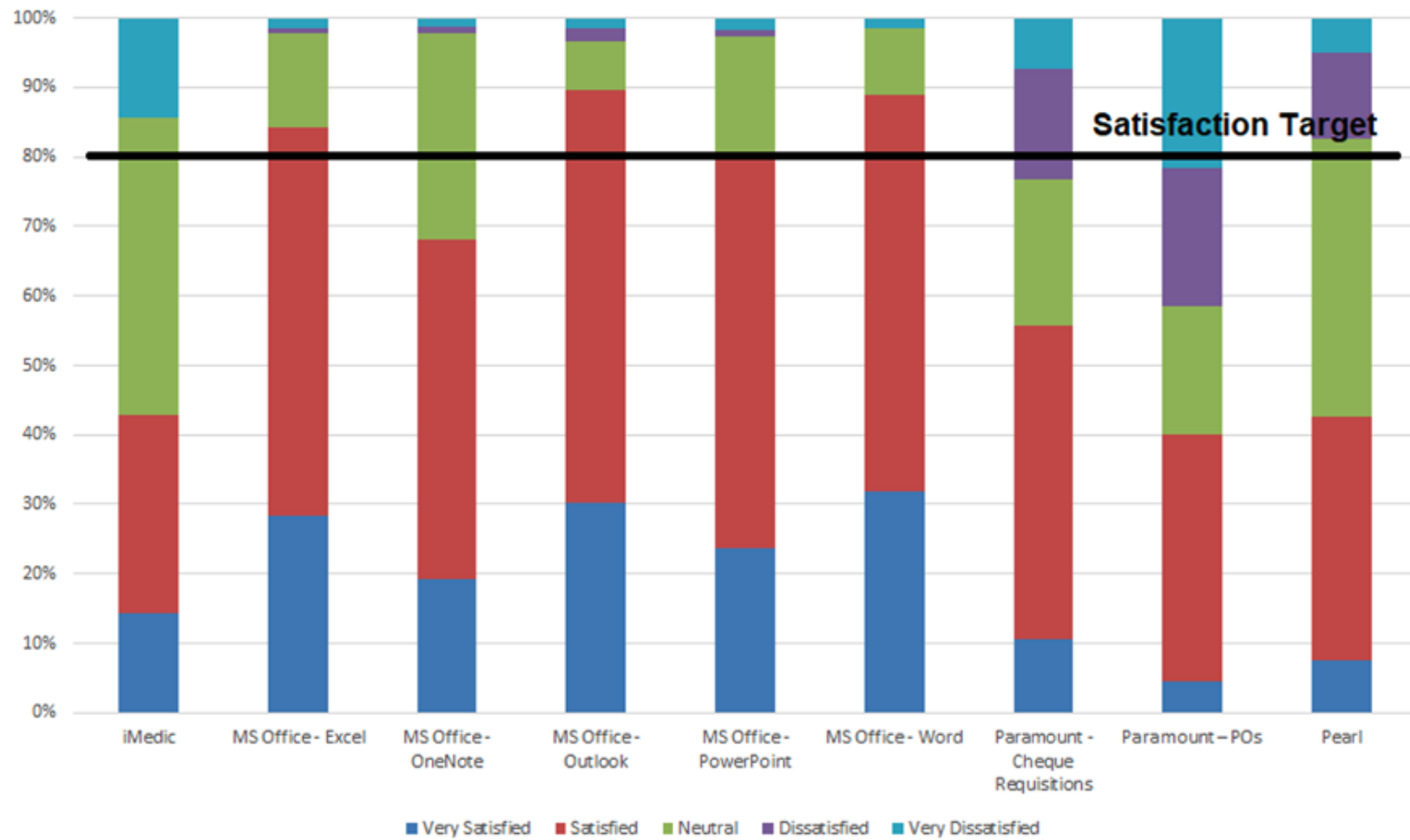
We recommend for ITS to revisit the issues with 2-in-1 devices and perhaps consider a different standard.

Business Systems

Use of most business systems are understandably limited to users of the specific business function. That said, the level of satisfaction for these systems is also low for many of the systems.







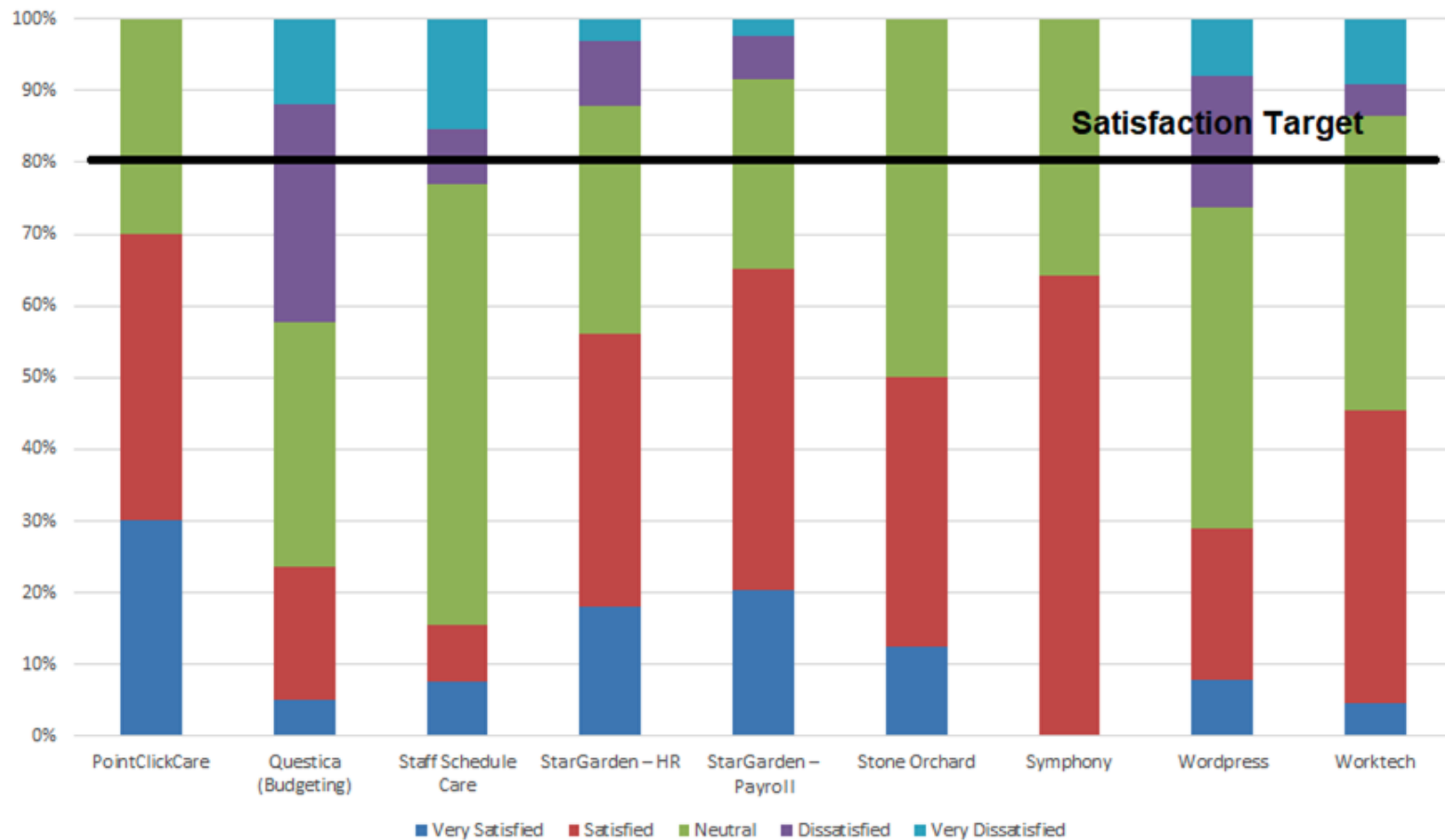


Figure 3: Staff Survey Results – Business Systems

Both ActiveNet and CityView have surprising levels of dissatisfaction that we don't typically see in other municipalities. This is an area worth investigating.

Some of the lowest satisfaction ratings are for the financial systems that are being implemented through BAS – all Finance systems, including GP AR, GP Accounting, GP Tax, Questica and Paramount show higher levels of dissatisfaction. These results are not surprising considering the capability gaps in these systems and the

challenges in successfully completing the active IT implementation projects (which are discussed further in the next section) but they are an indicator that there is significant work ahead.

ITS Services

Among the participants, about 85% of respondents are overall satisfied with the reliability of the technology they use at the County and only a small number (3%) of respondents across the board expressed any dissatisfaction at all. This is consistent with the last survey of 2020.

We note, where comparing satisfaction with the technology aspects of the ITS team, ratings are significantly higher than the Business Solutions area.

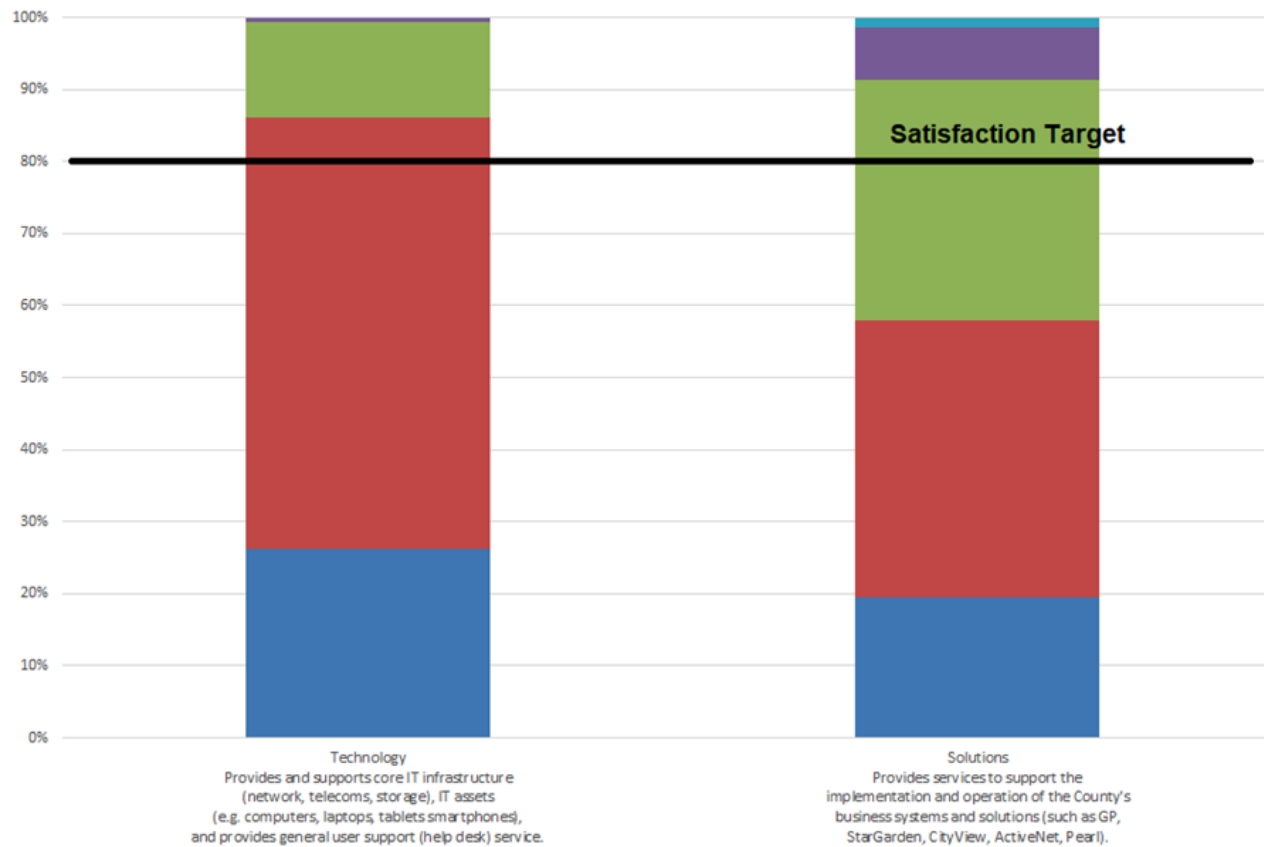


Figure 4: Staff Survey Results – ITS Services

Again, this is not particularly surprising given the BAS situation and the inability to truly ramp up the Business Solutions team but is another pointer to where there needs to be focus going forward.

Communication

Overall, nearly 70% of respondents are satisfied with the communication practices in place. While there is some improvement in this area, there continues to be room for improvement particularly in communication related to technological changes.

New Technology Needs / Requirements

The survey results show that only about 20% of participants across the organization believe that ITS can anticipate their technology needs, which is a very significant decline from 66% in 2020. This is a concerning dip, and really points to the need to build up the relationship management work that was anticipated in the business solution partner program.

The levels of satisfaction with the rate of technological change has dramatically fallen compared to our previous assessment and this may be attributed to challenging and delayed technology project implementations, alongside the attention devoted to BAS at the cost of other opportunities.

Summary

Overall, the survey indicates some fairly common opportunities for the team to work on ITS service improvements – network, remote access, Citrix, softphones and devices appear to be areas worthy of further investigation to see what enhancements can be made. Broadly, staff are satisfied with ITS helpdesk – with many respondents commenting on the improvement.

More revealing perhaps is the dissatisfaction with some of the key new systems – particularly the Finance systems – which suggests there is much work ahead. There is a growing frustration with the pace of change, with the business solutions function, and a dwindling feeling that ITS understands business needs.

We interpret this to be a reaction to the BAS situation and the inability to pull resources away from that area of focus.

2.1.3 Senior Management Team Feedback

Next, through a workshop with SMT and ongoing discussions, the consulting team sought input on areas where leadership identified improvements made since 2020, and where the County faces continuing challenges.

Broadly speaking, there is a positive feeling at SMT that the County has “come a long way with IT” since the previous Review, and the following key improvements are worth recognizing:

Improvements

- The restructuring of the ITS team (recommended by the 2020 Review) has helped clarify roles and responsibilities in the group and for customers interacting with the group.

- There has been a significant attitudinal change in ITS with the team now being much more customer-focused than it previously was. The ITS team has become more solutions-oriented, and more ready to say “yes”.
- The implementation of CityView is seen as a success, and the introduction of the Virtual City Hall online portal for Tax has been a positive change in service delivery.
- The emphasis on cybersecurity and associated training led by ITS has been positive.
- Although the introduction of IT Governance is in its infancy, the early signs are positive and there is a recognition of the important role that SMT has to play in prioritizing areas that require IT investment and attention.
- The County has learned an enormous amount through the execution of recent projects. These lessons must be incorporated into future work and planning.

Challenges

Despite these positive signs, there are still significant barriers and challenges that remain and that continue to inhibit the County’s ability to implement solutions and service enhancements as fast as it would like.

These challenges include:

- The BAS project continues to consume substantial time in Finance, HR and in ITS (particularly for Cheryl, Sam, Stephen and Hemali). For ITS, because of this, the Business Solutions Partner program (envisaged by the 2020 Review) has not been realized, and there are insufficient staff resources available to work on other business transformation or continuous improvement initiatives.
- Demand for new and improved technology solutions is far outstripping the County’s ability to keep up with that demand.
- There are resource pressures and capacity limits in all business areas – not just in the ITS team – that inhibit the ability to move initiatives forward.
- While there has been some positive progress on a small number of the Business Process Optimization (BPO) opportunities identified in the Review, the County’s ability to take advantage of the highest value of these has been hampered by limited resource availability.

- Several key staff in ITS are currently retained on contract, not in permanent positions, and there is concern about the County's ability to retain key staff in IT.
- The Governance model has not yet proven itself, and staff are not yet clear on how it will function. There are management concerns that the governance process will "slow things down".
- Despite good efforts and progress, there is a feeling that the technology space is moving faster than ever, and concern that the County is falling further and further behind.
- Despite positive attitudinal changes, there are some instances where (for various reasons, including overwork), the ITS group is seen as a gatekeeper, seemingly preventing progress or rapid responses to emergent opportunities.
- Because of resource limitations in ITS, there is limited training on new solutions (e.g., the introduction of softphones), which limits the usefulness and impact of new products.
- Frontline staff are frustrated with capability gaps with the BAS product set. Core components of the solution are not yet fully implemented or operational (e.g., PO management, budget vs. actual reporting, work order management).
- There is a need to improve and make more consistent, the project management approaches and methodologies deployed at the County. The County must also reflect on the BAS project, learn, and internalize these lessons so that future projects and change work can benefit from this learning.

Overall, there is a clear recognition at SMT that technology is a significant source of opportunity to continuously improve service delivery and in doing so, free up staff resources. But, the current situation, recent experience, and the challenges the County faces, raise several important questions for County leadership, including:

- As a small municipality, will it ever be possible for the County to "keep up" with technology?
- Can the County recruit, retain and afford the talent needed to build a successful technology program?
- Are there some aspects of technology that the County should use 3rd parties for, instead of managing in-house?

These are relevant questions that will be discussed further in later sections.

2.2 BAS Project – Current Situation (Observations)

While we have not completed a comprehensive Enterprise Resource Planning (ERP) systems implementation audit, we have reviewed documentation, talked to key stakeholders and project personnel, and users of the constellation of BAS systems.

Three key messages were identified from these conversations.

2.2.1 Functionality and Capability Challenges

The County had an ambitious objective with the BAS project. The goal was to address three key areas with an integrated, consistent solution that provided a shared foundation for activities within:

- Finance.
- HR.
- Asset and Work Management.

The vendor (Aptean, now Central Square) proposed a collection of independent solutions (Great Plains, Questica, Paramount, Pearl) which would replace existing systems and would be integrated (or interfaced) together to meet the County's requirements.

For Finance, Great Plains (AR, AP, GL, Property Tax and Cash Receipting), Questica (Budgeting and Reporting) and Paramount (Purchasing and PO Management) have been implemented.

The core features of Great Plains and Questica broadly meet the County's requirements (Tax, Accounting, GL, AP, AR, cash receipting, Electronic Funds Transfer (EFT) processing and bank reconciliation, etc.). The FMW (Financial Manager's Workbench, FMW) budget management system was formerly used, and was phased out at the end of 2022. Questica will be fully operational for the 2023 budget cycle.

Virtual City Hall was implemented as an add-on to Great Plains in 2022 providing a web portal for customers to manage tax payments, receive electronic bills/notifications and order tax certificates.

Nonetheless, some core features within Great Plains are not performing correctly and integrations remain incomplete or are problematic, leaving management and staff without the core reporting and data (e.g., planned vs. actual spend reporting) that they need to effectively operate.

Paramount was implemented in 2018 to handle procurement processes, but key functionality is not currently working correctly, JAO (Job, Activity, Object) coding is a challenge in Paramount, and some features (such as credit notes and holdbacks) are not set up in the system. In practice, the system leads to staff running procurement outside of the system or not using all the features available.

For HR, upon further and more detailed review by County staff, the originally-proposed solution from Central Square (Great Plains HR) has been found to be a poor fit for the County and so no HR functionality has been implemented at this time.

Staff have assessed that the existing HR solution used by the County (StarGarden), with an upgrade, would better meet the County's requirements than the vendor-proposed BAS solution. Thus, the decision of whether to pursue the original BAS plan to migrate Payroll and other HR functions into Great Plains was, at the time of our review, undecided.

For Work and Asset Management, while various versions of Pearl/WorkTech are currently implemented, the system is largely used for time recording and to feed Payroll, the solution is not actively used for Work Management purposes.

Citywide has now been deemed to be a better fit for the County's Work and Asset Management needs than the proposed Pearl/WorkTech solution and is being actively implemented to support asset and work management practices.

In our opinion, the BAS system is overly complex in its design. Because of some key design decisions made early in the project in 2017 (namely the level of detailed financial tracking and reporting to be managed within the system), and the understanding that the implementation of such a design would be easier than represented by the vendor, the project has faced numerous implementation challenges. The County would be one of the first municipalities attempting to implement these solutions, in this configuration, with tracking at the detailed level that the County aimed to track.

In retrospect, the project team and stakeholders have agreed that the:

- Complexity and detail level of tracking at the JAO level for some County processes is too high and onerous for staff, without delivering the required or expected value.
- Value of tracking certain activities and time applied to those activities at the JAO level is no longer believed to be a key requirement.

- Level of granularity reported by the JAO can create a false sense of accuracy/insight (if data entry is unlikely to be accurate to the level reported).

Furthermore, the inability to fully integrate the software solutions (at the desired level of granularity) has proven to be a significant impediment.

In attempting to resolve these complexities and bending the solution to meet these requirements, the project has focused largely on Finance-related processes and thus, capabilities envisaged in the original vision for BAS – in Asset and Work Management, HR, and Payroll – have not been implemented.

The diagram below in Figure 5 highlights our understanding of the current state.

Implemented BAS Capabilities			
Finance	HR	Asset and Work Mgmt	Legend
GL	Core HR	Acquisition	Needs improvement
AP	Workforce Mgmt	Deployment	Needs review/replacement
AR	Talent Mgmt	Maintenance	Not implemented
Purchasing - PO	Extended HR	Replace/Rehab	Implemented
Purchasing - CR	Strategic HR	Disposal	
Budgets		Capital Planning	
Cash Management		Capital Accounting	
Bank Reconciliations			
VCH			
P-Cards			

Figure 5: Implemented BAS Capabilities

Despite significant effort, key functions are not implemented, and the BAS solution does not – and is unlikely to – fully meet the core functionality and capability requirements that the County originally defined for its goals and objectives.

2.2.2 Sustainability Challenges

The BAS project has run significantly over its originally-planned 2-year timeframe. While some of this is attributable to the pandemic and building moves at the County, not all of the delays can be attributed to these factors.

Regardless of the cause, a significant problem that long-running projects face is contention for resources, and this is the case with BAS. As elements of the system “go live”, operational demands are placed on the project team who are then left to balance operational and project work. These pressures further delay project deliverables in what becomes a vicious cycle.

Although we note that the County has ramped up BAS resource commitment, we see that these team members have other responsibilities, and there is a need for additional ongoing development and support capacity.

Furthermore, with most of the software live, and the team focused on project execution, the County had, at the time of the assessment, in the fall of 2022, fallen behind with software updates of the systems that make up BAS.

- Paramount had not been upgraded since 2018.

This means that fixes and new capabilities aren’t getting out to users of the software.

In some cases (Paramount, for instance), the required upgrades will result in significant user interface changes to the software, which will require re-training of staff – another heavy lift that the BAS team does not have time for.

In addition, while the vendor proposed a series of interfaces between systems, this work has been significantly more complex and time-consuming to implement and maintain than originally anticipated. Given the number and complexity of the solution integration requirements, it is somewhat surprising that there was no integration technology proposed by the vendor to support and manage the web of 20+ interfaces and integrations that are required to make BAS function.

The consulting team is concerned about the ongoing sustainability of the solution due to the interface and integration complexity, and the lack of technology to manage and monitor integration and interface performance.

From a sustainment perspective, there are also some concerns about the vendor commitment and available resources to the products that the County has implemented.

The software industry has gone through a radical paradigm shift in the last decade, moving away from on-premise solutions to a Cloud delivery model for software. The BAS products are on-premise products, part of the previous generation of technology.

We note that Central Square and other municipal software vendors are shifting attention to developing and building Cloud-based products. They offer a new Cloud-based Tax Management system and an alternative Cloud-based Work Management product called Lucity (that appears to receive far more attention than the Pearl product).

Furthermore, according to Microsoft's support documentation, the version of Great Plains running at the County at the time of our assessment (Fall 2022) – Dynamics GP 2018 R2³ - will move into extended support from Microsoft after January 2023 (mainstream support is dropped, with the product primarily receiving only security updates until 2028) – indicating that the product is approaching the end of its life and that Microsoft is encouraging organizations to move to their latest iteration of the product. It is important that the County work with Central Square to understand the implications and pathway to move to the 18.x version of the software and maintain this through a regular (at minimum annual) update program – recognizing also that this may have knock on impacts to integrations and other configurations.

Vendor support from Central Square is also not at the level needed by the County. The County has no current formal Service Level Agreement with the vendor. There are very few experts at the vendor to support the BAS set-up and those experts are usually only available for a limited amount of time in a month and need to be booked in advance to get their support. The County has experienced a lot of staffing attrition and internal transfers on the vendor side.

Because of these challenges and the previously-discussed functionality and capability gaps, the County has been unable to reach a steady state for BAS that is suitable for operationalization. There is no current plan to move to operations because, in practice, too much of the solution is incomplete, or not fully functioning as intended.

2.2.3 Project Governance and Management Challenges

ERP system deployment projects are especially, if not notoriously, complex projects that are difficult to get right. They require experience, expertise, a commitment to change and highly effective governance to successfully implement.

The County was (and continues to be) lacking in extensive ERP implementation experience, and experienced project leadership to execute the project. In retrospect, engaging an external, highly experienced Project Manager with extensive ERP experience would have been beneficial.

In 2020, the County did belatedly establish a BAS Steering Committee of the key stakeholders. A dedicated Project Manager, drawn from the existing project team, was assigned at that time also.

While risks and challenges were identified, reviewed, and monitored throughout the project by stakeholders, alternative strategies (a simplification of the JAO model, for instance) don't appear to have been suitably explored

³ Learn more at <https://learn.microsoft.com/en-us/dynamics-gp/terms/lifecycle>

or pursued. An understandable determination to “stick to the path” – despite indicators that suggested it may not be the correct course of action – prevailed which led to the team resolving individual issues with a narrow focus and over time, the original vision for BAS has been lost.

Seconded project resources were assigned to the project, however, the project was funded and resourced based on the assumption of a 2-year duration; but, in reality, the project has been underway for 5 years and understandably, it has been challenging to keep resources committed to the project.

This was true on both the County and vendor side. Indeed, during the course of the project the vendor (Aptean) was sold to a new owner (Central Square), which has likely had a fairly significant impact on the project and a change in strategy around the solutions originally sold to the County as part of the BAS solution.

2.3 Summary Observations and Commentary

Where they have been implemented, the changes recommended in the 2020 IT Review appear to have resulted in some positive impacts – a clarity around IT roles and responsibilities, an emergent Governance model, the successful implementation of CityView, and some improved project Governance practices.

Nonetheless, there are several recommendations made in the Review that have not been fully implemented. At this stage, we suggest there are opportunities to:

- Continue on the path for recruiting into the ITS team by adding in the short term at minimum an additional Solutions Analyst and Network and Technology Analyst, before considering adding a GIS Solutions Analyst or additional Solutions Analyst, and a second Network and Technology Analyst.
- Continue to implement and operationalize corporate technology Governance practices.
- Implement the remaining top 7 BPO improvements.

Unquestionably, the County continues to be faced with major ITS resource challenges, and the BAS project continues to be a significant resource drain that is consuming too much attention and resources.

At this stage, looking at the BAS situation, we see that:

1. The project is over budget, is significantly delayed, and in practice, has delivered little of the functionality required and anticipated in the original project.

2. The solution designed is too complex and fragmented to be completely successful or truly sustainable. There is limited confidence that the technology is likely to meet the needs of the organization from where it stands today.
3. The project team is spinning its wheels and has lost momentum – faced with a raft of complexities and interdependencies, the County appears to be in a gordian knot from which it is difficult to extract itself.
4. BAS cannot be operationalized as-is because there are too many unresolved issues and incomplete capabilities.

The consulting team believes a significant re-think and reset is necessary, and we lay out these recommendations in the next section.

3.0 BAS Recommendations and Go-Forward Actions

In this section, we lay out the recommendations for BAS first, because they have significant ramifications, implications and impacts on the ITS team recommendations.

3.1 Acknowledge

First, the County should acknowledge that the BAS project will not meet the original goals, and that the originally-proposed solution design is no longer a suitable design to pursue. While there are some valuable deliverables (notwithstanding the new Tax and online portal) and important learning that has been achieved along the way, the project has failed to realize its goals.

3.2 Reset, Re-focus and Re-energize

Nevertheless, while the BAS project has not delivered the complete capabilities as hoped, the needs that the County has for solutions to support people, money and work- and asset-based processes, continue to be critical needs that the County must implement.

We recognize that it has been a slog to get to this point – it has been frustrating and disappointing for the project team and service owners. The prospect of significant further work ahead will be understandably demoralizing.

However, the County must reset, re-focus and re-energize. It must build a new momentum, establish credibility, and begin to deliver real enhancements and improvements into the hands of users.

To achieve this, we recommend that the County split the BAS project into three separate projects or project workstreams, focusing on:

1. People (HR, Payroll, Time/ Attendance, Disability and Talent Management).
2. Money (Finance, Tax and Procurement), and
3. Work and Assets (Work Orders, Service Requests) individually.

Specific recommendations for each of these projects are identified in the following sections.

3.3 Go-Forward Approach

In terms of the approach going forward, we recommend that the County:

- Communicate openly, honestly, and clearly to all stakeholders, affected staff and project team members regarding the change in direction. We suggest that this communication come directly from the CAO.
- Conduct an honest, open, and transparent “lessons learned” exercise with the key players who have participated in the BAS project. Document the outcomes and socialize with IT Governance. Commit to incorporate lessons learned into all future initiatives, especially the three workstreams identified here.
- Structure its project teams in future to:
 - Favour action over over-analysis – review and consider options, decide, commit, and go.
 - Focus on getting the basics up and running, implementing “good enough” solutions to manage the process – ensure they get the data, provide the report, and avoid seeking perfection.
 - Keep it simple, design for the 90%, don’t get distracted by edge cases, exceptions, and process quirks – focus on building the solutions to address the majority of the need.
 - Where possible, review existing processes, challenge the status quo, and simplify before implementing.
- Assign a Directly Responsible Individual (DRI) for each of the three projects, who will be assigned full accountability for the success of the respective workstreams. While the County may be more familiar with the term “sponsor” for this role, we think the term DRI better communicates the expectation of this role. The job of this person is to ensure project success – working with the project team to clear barriers (resource, policy, etc.):
 - For Finance, Tax, Procurement > GM of Finance and IT, Mark Merritt
 - For People (HR, Payroll, Time /Attendance, Disability and Talent Management) > Director of HR, Megan Jamieson
 - For Work and Assets > GM Engineering and Capital Works, Tyson Haedrich

The DRI should be accountable to ensure that lessons from the previous BAS work are actively addressed/mitigated in the subsequent projects. The DRI should also work with each of their respective project teams to define realistic success metrics / outcomes, and methods to measure and report upon them.

Each of the projects should have a Project Manager and core team (at minimum we suggest an assigned Solutions Analyst and a minimum of one Subject Matter Expert from the core business unit, along with vendor resources) assigned to work closely with the DRI.

Each will require good project management practices and discipline be applied. All three projects should be re-initiated, following best practices with a charter that redefines the scope, timeline, resources, roles and responsibilities, and defined measures of success. All project commitments, decisions, issues, risks, scope changes, configuration changes, etc. should be documented and stored in a central repository.

We see value in continuing to operate the BAS Steering Committee, for coordinating purposes. We suggest that the County consider retitling the group – as People, Money, and Assets Technology Committee.

We recommend adding to the membership of the Committee the CAO, the permanent ITS Manager/CIO, and the Project Manager for each individual project. The Committee should meet at a minimum monthly to review project progress, ensure alignment, address integration needs and deal with issue management.

We recommend revisiting with Central Square, when appropriate, the County's ongoing supporting and licensing arrangements (reducing and/or cancelling licences where necessary) and ensuring that suitable support Service Level Agreements are in place for ongoing support of the Finance, Tax and Procurement systems.

3.4 Finance, Tax and Procurement

We recommend that the County draw a conceptual line around the Central Square systems and the implemented components of BAS – Great Plains, Questica and Virtual City Hall (VCH) – to denote these as the County's core Finance, Tax and Procurement system. Leaving other system functions to be met by other systems outside of the BAS realm.

As noted above, the GM of Finance and ITS is the DRI with accountability for the success of the Finance, Tax, Procurement initiative.

The goal must be, over the next 12 months, to get the core financial functions (AR, AP, GL, reporting) working as effectively as possible, simplifying processes and systems configuration where necessary to achieve this goal. The project team will be on a rescue mission and will only focus on the key "Money" capabilities (noted in the table below).

We suggest that the County timebox this work – to ensure focus, avoid scope creep and to bias the team toward action – and acknowledge that at the end of this time, the solution may be transitioned to operations without the completion of all features and functions.

Identifying a pragmatic and realistic “fix list” of flaws and problem items and actively working to identify and implement appropriate fixes and mitigations is critical.

One central notion is revisiting the JAO reporting requirements, and whether the level of recording and reporting financial transactions can be simplified to the GL-level. This must be done early – so that the County can nail down a common approach that can inform the other workstreams. We suggest this be revisited as part of the initial 12-month work, and we suggest the County start by speaking to other users of the Great Plains system (such as Innisfil) to understand how they manage this across their Finance system and sub-ledger systems, and what the implications and implementation approach for the County would be.

Finalizing implementation of features, functionality and systems (for instance, of Questica), and fully decommissioning previously-used systems, such as FMW or the multiple versions of existing systems such as Pearl is a priority so that the environment can be simplified and become more sustainable.

The project team must also determine the strategy with Paramount, including critically assessing whether the product provides sufficient value, what impact Purchase Cards (pCards) may have, and whether the County should bite the bullet, upgrade the system, and broadly enforce its use, or revert to using the Great Plains procurement capabilities.

To lead this work, we believe the County would benefit from engaging, on contract, a highly-experienced external Project Manager that is a hands-on ERP implementation expert (specifically with experience in Great Plains). The individual must be given the agency to provide the necessary strong project leadership as well as drive the decision making and change management needed to implement fixes and the remaining aspect of the solution.

We suggest a small internal Subject Matter Expert (SME) team with Sam (as the Analyst), a Solutions Analyst, and a business SME to work closely with the external Project Manager and the DRI.

3.4.1 Money Project

Record to Report	Procure to Pay	Quote to Cash (Revenue Collection)	Planning and Budgeting
<ul style="list-style-type: none"> Core Financial Management (GL, AP, AR, Cash Management, Bank Reconciliations) 	<ul style="list-style-type: none"> Implement P-Cards to replace Check/Cheque Requisitions 	<ul style="list-style-type: none"> Continue using GP/VCH for taxation 	<ul style="list-style-type: none"> Implement integration between GP and Qwestica
<ul style="list-style-type: none"> Build a prioritized list of improvements and fixes that must be completed for the Finance system to be deemed completed 	<ul style="list-style-type: none"> Revisit PR/PO process 	<ul style="list-style-type: none"> Build an agreed list of improvements and fixes 	<ul style="list-style-type: none"> Enable actuals and visibility to cost centre managers
Blank	<ul style="list-style-type: none"> Consider options: <ul style="list-style-type: none"> Simplify process Decommission Paramount Replace with GP Procurement module 	Blank	<ul style="list-style-type: none"> Decommission FMW

Duration

- Max 12 months.

Sponsor

- General Manager, Financial & Data Services.

Project Manager

- External PM.
- Hands-on ERP implementation expert.
- Municipal sector experience with change management.

Internal Resources

- Business Analyst
- Solutions Analyst TBD (technical)
- SME (backfilled)
- Other assigned business unit staff (eg. procurement)

Principles

- Use the system as it is intended to be used.
- Follow “good enough” model (not every internal control needs automation).

Discussion Points

- Cost/Value of JAO codes.
- Validity of data collected.
- Simplify financial system; move away from JAO.
- Speak to other municipalities.

3.5 HR, Payroll, Time/ Attendance, Disability and Talent Management

In parallel with the Finance project, the County should focus on HR systems and automation as a separate project with its own project team. The Director of HR is the DRI, accountable for the overall success of the initiative.

There will be important intersections and dependencies between the Finance, HR and Work and Asset systems and related workstreams, however in line with our red-lining statement above, we recommend that the County *not*

move Payroll into Great Plains and *not* use the Great Plains HR module. That said, decisions around the GL structure and JAO level recording will have a direct impact on Payroll and Time and Attendance capability implementation. So these decisions must be made quickly – so that HR work can proceed.

Given the broader BAS situation, we suggest that, for the medium term (next 2-3 years) at least, the County look to re-use what it already has – the StarGarden system. An upgrade to the latest version should provide many of the key features that the County is looking for.

Our recommended first step would be to confirm the capabilities that are considered core (see the table below, with our suggested categorization) and perform a fit-gap analysis of the requirements against StarGarden capabilities (in the current and upgraded versions) followed by a decision point. We expect that the upgraded version of StarGarden will meet the County's requirements and where possible the County should try to use the core features of StarGarden. In practice some add-ons and complementary solutions may also be required – but if used, these should be integrated to ensure that master data and process integrity is maintained.

If upon more detailed review, the County determines StarGarden cannot meet its requirements, then an alternative path (e.g., procurement of a new Human Capital Management (HCM)) could be considered. If this were to be the case, the County should consider this in the context of setting any future ERP strategy, as the selected HCM solution could form the foundation of a new ERP strategy.

Depending on the decision point, the development of an implementation plan would follow. Here, we urge some caution. While there are numerous extended capabilities of complete Human Capital Management systems that the County may wish to pursue (recruitment, learning management, etc.), getting the foundation right (employee records, position management, self-service, payroll and benefits) is the critical first step.

Thus, we suggest the County focus first on ensuring the core HR capabilities are in place – employee records are accurate, up-to-date and maintained digitally, enabling the basics of employee and manager self-service, benefits, compensation, and payroll administration.

Then, one by one, enabling additional capabilities in an agreed sequence – but only when previous modules and functions are properly up and running and transitioned to operations. This does mean deferring new and enticing opportunities until the basics are in place.

Importantly, we would encourage the project team to think about adopting system-driven best practice process models, rather than trying to “lift and shift” its existing business processes into the system.

This is what we mean by change management – the implementation of a new system will change business practices, processes, and procedures. Rather than trying to bend (configure, customize) the system to meet existing practices in place, the County should start with a default expectation that the County’s current practices should change to meet the system. Tweaks and adjustments should only be made if necessary and if the DRI signs off on the need to change.

We recommend that the County focus on “People” capabilities in the order shown in the table below.

3.5.1 People Project Approach

Core HR	Workforce Management	Talent Management	Extended HR	Strategic HR
• Employee Records	• Scheduling	• Recruitment and Onboarding	• Performance Management	• Workforce Planning
• Employee Self-Serve	• Time/Attendance	• Offboarding	• Learning Management	• Succession Planning
• Manager Self-Serve	• Leave Management	Blank	• Labour Relations	• Health and Wellness
• Position Management	• Disability Management		• Grievance Management	• Employee Engagement
• Benefits and Compensation Administration	Blank	Blank	• Health and Safety	Blank
• Payroll Administration				

Duration

- Max 18 months.

Sponsor

- Director, Human Resources.

Project Manager

- External PM.
- Hands-on HCM implementation.
- Expert municipal sector experience with change management.

Internal Resources

- Business Analyst
- Solutions Analyst TBD (technical)
- SME (backfilled)
- Other assigned business unit staff.

3.5.2 Suggested Go-Forward Path

Vision

- Vision-setting and go-forward plan (follow the suggested path).
- Principles – follow the “good enough” model – this means, don’t aim for the best version of a new process out of the gate. Adopt a “crawl, walk, run” approach – focusing on first implementing simple/cheap/quick solutions that can help you learn and gain experience, before trying to implement a more sophisticated, 100% or perfect solution.

Fit-Gap Analysis

- Determine HR requirements.
- Conduct fit/gap against latest version of StarGarden (Payroll, Employee Self-Service (ESS), scheduling, time).

Decision Point

- Determine HCM.
 - Status quo.
 - Upgrade StarGarden.
 - RFP for new HCM solution.

Implementation Strategy

- Plan for scheduling, timesheets, ESS, Payroll, GL interface.
- Decommission Pearl, if needed.
- Integrate Payroll with GP (GL).

Clearly, one critical aspect to resolve is time recording and data flow into Payroll. The setup currently involves time recording in Staff Schedule Care, Pearl, FirePro, Excel and data entry into StarGarden. In the short-term, this should continue to operate as-is.

In the medium term, some of the specialized systems are likely to change (e.g., FirePro and Pearl), but time and attendance management will likely continue to depend on some specialist and Work Management systems to track time in some business units, and a generalized use of StarGarden for office staff and regular work time recording.

Like Finance, the County needs a dedicated project team to ensure project success. This team should include an external Project Manager and dedicated internal resources, including subject matter experts from the HR team and business units.

We recommend that the external Project Manager be a very experienced, hands-on HCM implementation expert. Experience with StarGarden (if that's the path forward) would be beneficial, but not essential. The individual must provide strong project leadership as well as strong change management capabilities.

A small internal Subject Matter Expert team that should include a technical and business SME will be needed to support the external Project Manager. This team will work closely with the DRI and HR team.

3.6 Work and Assets

After Money Projects are implemented, corresponding systems deployed and functioning at an acceptable level, we suggest that attention can then re-focus on the “Work and Assets” project.

We did not dig too deeply into the situation here, but the County has already begun to move away from Pearl to use a combination of Citywide and Esri products for core work order management and asset management processes.

We know that Citywide and Esri are both solid solutions, broadly used by our clients and both with an encouraging future development path. We support this direction and encourage the County to map out a clear implementation plan.

In the medium-term, this will mean disabling the use of Pearl for time/attendance and decommissioning all Pearl and WorkTech instances, migrating to time tracking of work in Citywide.

3.7 Transitioning to Operations

An important aspect of managing systems and processes in today’s world is to recognize that the technology systems purchased by the County are products that should evolve – not projects that are done, finished, and forgotten.

In contrast to an asset like a bridge (which, once built, typically functions as designed for the next 80 years) software assets are used by people daily. New staff join the organization and they must be trained on how to use the software. The way staff work changes, opportunities to improve processes emerge, new requirements, steps or activities are added, and new capabilities are added to software.

CityView, Great Plains, and StarGarden are not static assets – they are assets with the potential to evolve and improve over time, which must be actively managed if the County is to get the best value out of the asset.

Therefore, specialized resources, in ITS and in business units, must be assigned in organizations to ensure that they can take full advantage of their investment.

Transitioning to operations for each of these initiatives will require the following:

- Identifying and documenting ongoing business unit, IT, and vendor support roles, responsibilities and associated procedures and service expectations.

- Establishing training and re-training responsibilities.
- Carrying out effective knowledge transfer (documentation, tacit knowledge, education, and training) from project personnel to ongoing operations/support resources in ITS and business units.
- Establishing ongoing product management procedures (for example, establishing a formal Product Management Group, including the DRI, key stakeholders and ITS business solutions staff to oversee the intake of new ideas, enhancements, plan for upgrades and changes for each of the key business solutions, including Planning, Permitting and Licensing (CityView), Finance (GP, Paramount, Questica), HR (StarGarden), Work and Assets (Citywide), GIS (Esri products)).

3.7.1 A Comment About Departmental Super-Users

ITS, quite rightly plays a key role and should work closely with partners in business units to help implement and operationalize solutions and provide technical support.

However, the solutions underpin the operations of the business unit. So, it is incumbent on leaders and manager's in respective business units to fully understand what the software can do, how it impacts their operations, how it might be used in ways that it may not already be used, how it can be improved, how it can be extended, they should know what's coming in the next release of the software, and how those features may benefit the business unit. They must help onboard staff, ensure they are trained, and ensure that staff are using systems correctly, that data entered is accurate and updated in real time.

We understand that General Managers and Managers are busy, so we typically recommend the assignment of a super user in each key area. A super user is an individual with a strong understanding of internal processes and how the software/solution supports and could support those internal processes. The goal of the super user is to support the implementation and ongoing operational success of the solution, providing training and 1st line support to users, liaising with ITS when necessary, and ensuring that technology supported processes service the team's needs.

Typically the role involves the following activities:

- Simple, local configuration changes – add/change drop-down lists, adjust fees, adjust process and workflow steps, update templates.
- User privilege management
- Provides guidance and support to users.

- Work with project teams as part of larger initiatives / projects
- Assists with testing and coordinating transition from testing to implementation.
- Assists with identifying specific training needs
- Creates and maintains relevant educational/training materials
- Organizes and assists with in-house training for business systems used.
- Systems and process training in service areas
- Documents and maintains applicable operating procedures.
- Business process review and optimization
- Receive feedback from end users – pass to Product Management team
- Identify enhancement opportunities
- Develops and produces reports, analysis, data extracts.

Often the role may be part of an existing role within a department, but in some cases a full time role is warranted.

We anticipate that the County will require these roles in Finance, HR and in areas reliant on the Work and Asset Management systems. We recommend the County begin to consider, as soon as possible, how these roles should be filled.

4.0 ITS Resourcing and Longer-Term Strategies

4.1 Addressing Key Questions

In the [Challenges](#) section above, we identified a set of questions that the County's leadership asked the consulting team:

- As a small municipality, will it ever be possible for the County to “keep up” with technology?
- Can the County recruit, retain and afford the talent needed to build a successful technology program?
- Are there some aspects of technology that the County should use 3rd parties for, instead of managing in-house?

4.1.1 Technology as Core Competency

Fundamentally, we believe that technology is an essential ingredient for efficient and effective service delivery in 2022. Customers expect to be able to request, apply, book, pay online. Staff don't want to waste their time entering the same data repeatedly into different systems – they want information at their fingertips, and they want their systems to be as easy to use as Amazon or their banking app. They want technology to free them from constraints, enabling them to work from anywhere (in a work vehicle, on a construction site, in a pump house, from home), and collaboratively, without friction with partners outside the organization.

As the County has seen through its implementation of systems such as CityView, ActiveNet and Virtual City Hall, technology *can* enable major internal efficiencies, while also significantly improving customer experiences. A win-win with ongoing returns in value for years to come.

For any organization intent on delivering efficient and effective service, technology is *critical*.

So, this means that a core competency of any municipal organization is being able to identify and implement technology capabilities that improve service delivery through automation, simplification or by improving customer experiences.

Thus, our position is that the County must keep up with technology if it is committed to meet service expectations.

4.1.2 Buying IT Services – Why Municipalities Don't Typically Outsource IT

But that just means the County needs the right technology and the right technology capabilities – it doesn't need to own the means of production. After all, the County is dependent on electricity to operate, but doesn't run its own power generation stations.

If an organization can buy its IT services from a service provider, *then why not do that?*

In the private sector and in larger urban centres, we see this as a common model and the “managed IT services” sector has grown significantly in Canada over the last decade.

A managed service model is one where, on a subscription basis and governed by a Service Level Agreement, a managed service provider (MSP) delivers services (such as network, infrastructure, devices, application hosting, and security) via ongoing and regular support and active administration on customers' premises, in their data centre (hosting), or in a third-party data centre.

However, in practice, over the last two-decades working in municipal technology consulting we have found very few municipalities that outsource IT in a wholesale manner or use managed IT services.

In our experience, small municipal organizations do use third parties to support their IT environments, but once they reach more than 100 employees they tend to in-source – hiring an IT Coordinator or similar type role and then growing out an in-house IT capability.

We estimate that, of municipalities the size of Haldimand County, perhaps 99% operate their own teams of IT staff.

However, it does happen. There are a handful of municipalities – Parkland County in Alberta and Stratford in Ontario are two that we are aware of – that have partnered with managed IT service partners (such as Longview Systems in Parkland's case) to provide IT managed services.

In this situation, core IT infrastructure and support is managed by the MSP. In both cases noted above, the municipality retains a CIO who oversees the managed services contract and other internal IT staff who are focused on business solutions and who work alongside the outsourced or MSPs.

Why is this the case? Why do municipalities typically not outsource, or use MSPs?

A few factors are at play. First, as we've noted, it is simply not common practice in municipalities. Municipalities are conservative in nature, and often follow patterns they see working for neighbouring municipalities and peers. With few examples of the managed service model in practice, it is perhaps safer to follow the broadly accepted model.

Secondly, municipalities are complex operations and in many lines of business which makes planning and implementing the managed service model non-trivial. Procurement and developing suitable contracts, dealing with staff implications and effective ongoing management of contracts are concerns that must be tackled. Furthermore, IT managed service costs can be significant and may, in fact, represent a net increase in costs because service standards are higher when contractually defined.

Finally, outsourcers are typically not interested in municipal business because of the size, complexity, and non-standard nature of the operation. Municipalities are in the Small and Midsize Business segment of the market, and large outsourcers typically target larger, global entities. For smaller providers supporting an insurance company or a construction firm is far simpler than the varied technology needs of a municipality.

4.1.3 Augmenting Internal Resources

While complete managed IT services is not common, out-tasking (i.e., parcelling up work packages and specific functions for execution by third parties) is a common practice employed by municipalities that Haldimand should embrace.

Our previous Report noted:

The reality of modern IT, particularly with municipal teams, is that it is simply impractical to maintain in-house the skills and capacity needed to plan, implement, and manage the County's increasingly complex technical environment and burgeoning project demands.

To do so would be unaffordable, or in the case of a short-term need, a bad business decision.

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. This team, in turn, works with a network of trusted partners, vendors and solution and service providers to deliver the required services.

Just as the County approaches road building and road maintenance – contracting engineering and construction firms with road design and building expertise – in some situations, IT can adopt the same approach, with the emphasis on “getting projects done”, or “project throughput” rather than on IT staff necessarily implementing the technology themselves.

Some key strategies include:

- Assigning capital funding to short-term contract staffing to support project delivery. This means increasing project budgets to cover internal and external staffing to successfully implement and is a widely used method to capitalize project costs and bring in specific expertise to support project delivery.
- Use managed service providers to manage aspects of your technology (e.g., Security Operations (particularly in the Managed Detection and Response [MDR] space), Network Services, Printer and Copier maintenance, Hardware renewal and Hardware maintenance programs).
- Use Cloud services (Software as a Service (SaaS), Platform as a Service (PaaS) and Infrastructure as a Service (IaaS)).
- Use consulting services and external expertise to help set strategy and direction.
- Leverage strategic partnerships where possible (e.g., other local municipalities).

This is a hybrid model of IT service delivery, that combines internal IT and business skills with market-based expertise and services. Ultimately, it means that the IT division, the CIO / IT Manager and IT Supervisors act as coordinators or orchestrators of IT service delivery – executed by a combination of internal and external providers.

The County has followed this advice in some areas – for instance, retaining external project management resources to help drive VCH (Virtual Citty Hall) and billing system implementation.

This advice continues to hold true, and we continue to strongly recommend this strategy for the County. We see significant opportunities to further leverage these options going forward.

4.1.4 Recruiting and Retaining Technology Talent

Large urban municipalities are facing significant challenges recruiting and retaining IT talent. Competition for technology talent is pushing up salaries and the ability to work remotely is clearly a significant factor for technology workers who can look far beyond their immediate vicinity for job opportunities.

Over the last few years, the private sector has focused heavily on wellness and so work/life balance – a municipal differentiator of the past – is no longer as strong a pull. Challenges in rural areas are further compounded by the lack of local talent and the previous attraction that moving to a small community offered to workers can be achieved with remote working opportunities in other sectors. It is undoubtedly a challenging situation.

But it's a challenge that must be faced with smart and innovative solutions.

Our best advice for technology recruitment and retention is to:

- Set a clear, future-looking strategy that shows a clarity of thought and direction, and has identified commitments to new, modern technologies.
- Have strong ITS leadership, with a clear vision.
- Embrace new technology, techniques, and approaches (agile, Cloud, devops, etc.) as a way of giving existing staff opportunities to learn transferable modern skills and as a means to attract.
- Develop a leadership team that is committed to using technology to transform service and service delivery.
- Review and revise job descriptions and job adverts to ensure that they adequately reflect what you are looking for, and that they reflect new technologies and paradigms (Cloud, agile).
- Grow your own talent – develop in-house skills and capabilities, invest in training and education for existing staff; ensure that the County offers a suitable career path.
- Recruit for attitude, not aptitude.
- Embrace flexibility – offer flexible working opportunities for technology workers.
- Create a positive working atmosphere and environment.
- Give teams / staff in ITS meaningful, transformative work.
- Modernize ITS staff work – automate tasks and activities which can be automated (e.g. password resets, file access requests, file restore requests, etc.)
- Grow your reputation; make yourself a destination for technology talent; seek out awards and promote your IT achievements.

4.2 ITS Resources: What's Next for Haldimand?

4.2.1 Resourcing Three BAS Workstreams

Specifically, in support of the execution of the remaining BAS work and moving toward operationalization, we recommend:

- The hiring of two temporary, experienced, contract Project Managers to lead the completion of the remaining Finance work, and to lead the implementation of an HR systems upgrade and expansion. These Project Manager positions should report to the permanent ITS Manager/CIO, and work closely with the DRI for each project.
- We recommend that the Business Solutions Supervisor return to their day-to-day core role to assist with operationalization of support and to build out the relationship management functions with departments – a transition plan to achieve this will be needed.
- We recommend the addition in the short term to add one new, permanent Solutions Analyst to the Business Solutions team to support the implementation and subsequent operationalization of the Finance, HR and Work and Asset Management solutions,

4.2.1 Resourcing ITS

Our broader recommendations around the ITS organization and to support operationalization of key business solutions are to:

- Continue under the organization model adopted following our 2020 Report, with two teams within IT.
- Add one new permanent Network and Technology Specialist in the Infrastructure, Security and Cloud team.
- Immediately move to fill the County's ITS Manager/CIO position permanently – the County may benefit from using an external recruitment firm to assist in the recruitment to this role.
- Move as fast as possible to convert existing contract staff in ITS to permanent positions to retain key talent and to establish stability and continuity within the team.
- Continue to develop internal talent/skills and capabilities by reviewing training and learning opportunities and mapping career progression and succession paths forward.

We continue to encourage the County to explore what services it can leverage third parties to deliver (from embracing Cloud opportunities and capabilities to out-tasking security management and monitoring activities). Then, we revert to our prior recommendations from the 2020 Report, with the following progression of position additions, in the following order of priority:

1. GIS Solutions Analyst or Solutions Analyst
2. Network and Technology Analyst (consider whether to appoint as a Senior role or not).

4.3 Additional Recommendations

4.3.1 Set Corporate Technology Strategy

While BAS has consumed much of the attention of the corporation and the ITS team for some time, there are many more opportunities to apply technology to make the County more efficient and effective.

Thus, it is important for the County to pull back and to look more broadly at the technology landscape, the web, data, and GIS, to assess the opportunities ahead and lay out a roadmap of activities, and an operating model that will position the County to fully leverage technology to the best of its ability.

So, we re-emphasize our previous recommendation to establish a 3-5-year Corporate Technology Strategy. This will help the organization to set direction based on business needs and provide a seamless service to its citizens, employee productivity/efficiency and ensure that the County is ready for the digital future. It will also help the organization focus on defined outcomes each year that will cumulatively lead to a desired maturity state over multiple years.

4.3.2 Operationalize Effective IT Governance

The County has made some good progress in this area by establishing an IT Governance Framework with accompanying TORs that describe the roles of each of the entities involved. However, the Governance is not used/applied consistently, and the groups are not meeting regularly to make it a working Framework. In addition, some technology purchases continue to occur outside of this Governance Framework.

In effect, the Governance needs to be clearly communicated and followed across the organization in order to ensure a single process is followed for IT-related investment. The parties in the Governance Framework are also

expected to commit to their roles and discharge their duties accordingly. Senior management oversight/involvement will significantly help toward this outcome.

4.3.3 Employ Effective Project Management Practices

The County must ensure that it internalizes the lessons learned from previous projects. By re-initiating the three new workstreams for BAS completion, there is an opportunity to establish good project management hygiene and practices. The County should take this opportunity to set the standard for all future projects.

4.3.4 Conduct Regular External Security Assessments

Our last recommendation – for the County to build a formal security plan and conduct annual security assessment using an external service provider to identify its vulnerabilities and accordingly plan to address them – remains one of our strong recommendations. In the absence of knowing where the high-risk exposures are, it is difficult for the County to protect itself appropriately. This, in turn, leaves the County vulnerable to cyber-attacks that are increasingly becoming complex and can potentially impact the County's regular business operation, its reputation and may also have financial and privacy implications.

This assessment will identify the risks relevant to the County – which must be understood to be corporate risks – and will have to be addressed as appropriate. It is to be noted that addressing these risks will most likely require some financial commitment.

4.4 Suggested Timelines

Sequencing of the work described above is illustrated in the suggested timeline below:

	2023				2024				2025			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Money - Work Stream												
Hire ERP Project Manager for 1 year contract												
Establish a dedicated project team (Solutions Analyst + BA + SME specialist) - fund. 1 backfilled position												
Project delivery / execution												
Training Services from the Vendor												
People - Work Stream												
Hire HRIS Project Manager for 1.5 year contract												
Establish a dedicated project team (Solutions Analyst + BA + SME specialist) - fund. 1 backfilled position												
Project delivery / execution												
Asset - Work Stream												
Hire experienced Asset/WM Project Manager for 1.5 year contract												
Establish a dedicated project (Solutions Analyst + BA + GIS analyst) - fund. 2 backfilled position for 1.5 years												
Project delivery / execution												
IT - Work Stream												
Upgrade IT Manager position to CIO position and recruit												
Convert existing contracts to permanent positions												
Return Business Solutions Supervisor to day-to-day operations with a transition plan												
Add a Solutions Analyst to the Business Solutions team (2023)												
Add a Network and Technology Analyst (2023).												
Add a GIS Solutions Analyst or Solutions Analyst												
Add a (Senior) Network and Technology Analyst												
Develop Corporate Technology Strategic Plan (including long-term ERP strategy)												
Conduct External NIST based Security Assessment and Establish Security Program												
Conduct External security assessments (Budget Approved - part of existing IT Operational Budget)												
Develop a BCP/DR Program												

Figure 6: Suggested Timeline

4.5 Estimated Costs for Budgeting Purposes

The estimated costs for the implementation of the recommended strategies are as shown in the table below:

	2023 Capital Costs	2023 Operating Costs	2024 Capital Costs	2024 Operating Costs	2025 Capital Costs	2025 Operating Costs
Money - Work Stream						
Hire an experienced ERP Project Manager for 1 year contract	\$100,000		\$100,000			
Establish a dedicated project team (Solutions Analyst + BA + SME specialist) -	\$45,000		\$45,000			
Professional Services / Vendor Support Costs	\$100,000	\$85,000		\$85,000		\$85,000
Training Services from the Vendor	\$20,000					
People - Work Stream						
upgrade of SG plus new functions/modules)	\$50,000		\$200,000		\$50,000	
Establish a dedicated project team (Solutions Analyst + BA + SME specialist) -						
fund. 1 backfilled position	\$45,000		\$90,000		\$45,000	
StarGarden Training of new modules and new configuration			\$20,000			
SG Upgrade Costs to the latest version, plus including Additional Modules						
Implementation Costs and Development / Configuration of Additional Workflows	TBC		TBC		TBC	
3rd Party Add-Ons	TBC		TBC		TBC	
Asset - Work Stream						
Hire an experienced Asset/WM Project Manager for 1.5 year contract			\$100,000		\$200,000	
backfilled position for 1.5 years			\$90,000		\$180,000	
CityWide Training			\$10,000		\$10,000	
CityWide Professional Services and Software Features			TBC		TBC	
Enhanced GIS Functionality to support Assets workstream			TBC		TBC	
IT - Work Stream						
Upgrade IT Manager position to CIO position		\$25,000				
External assistance for hiring of CIO		\$20,000				
Convert existing contracts to permanent positions		\$0		\$0		
transition plan		Already budgeted		Already budgeted		Already budgeted
Add a Solutions Analyst to the Business Solutions team (2023)		\$110,000				
Add a Network and Technology Analyst (2023).		\$110,000				
Add a GIS Solutions Analyst or Solutions Analyst				\$110,000		
Add a (Senior) Network and Technology Analyst				\$110,000		
strategy)	\$100,000					
Conduct External NIST Security Assessment and Establish Security Program			\$50,000			
Operational Budget)		Already budgeted		Already budgeted		Already budgeted
Develop a BCP/DR Program			\$50,000			
Subtotal: Project Workstreams	\$360,000	\$85,000	\$655,000	\$85,000	\$485,000	\$85,000
Subtotal: IT Workstream	\$100,000	\$265,000	\$100,000	\$220,000	\$0	\$0
	2023 Capital Costs	2023 Operating Costs	2024 Capital Costs	2024 Operating Costs	2025 Capital Costs	2025 Operating Costs
Total for Project and IT Workstreams	\$460,000	\$350,000	\$755,000	\$305,000	\$485,000	\$85,000

Figure 7: Budget Estimates

5.0 Conclusions and Recommendations Summary

The Review completed by Perry Group of the BAS situation and ITS team concludes with the following recommendations:

1. For BAS, we recommend that the County:
 - 1.1. Acknowledge that the BAS project will *not* meet the requirements for the County as a comprehensive, integrated ERP system.
 - 1.2. Separate the BAS project into three separate work streams or projects: 1) Finance, Procurement and Tax (Money), 2) HR (People) and 3) Asset and Work Management (Assets).
 - 1.3. Re-focus one workstream solely upon completion of the implementation of core Finance, Procurement and Tax functions. To do so:
 - 1.3.1. Hire an experienced ERP Project Manager on contract for 1 year.
 - 1.3.2. Establish a dedicated project team (e.g., Solutions Analyst, Business Analyst + Finance SME staff) to continue the Finance, Procurement and Tax systems work and use an agile approach to break the work into smaller work packages and deliver as fast as possible into users' hands rapid improvements to the core functionality.
 - 1.3.3. Identify and methodically resolve outstanding solutions bugs and flaws.
 - 1.3.4. Timebox the completion of the work to 12 months, before transitioning into an operational state.
 - 1.4. Accept that Payroll should not be moved into Great Plains and that BAS / Great Plains HR is not considered a suitable solution for HR or Payroll functionality.
 - 1.5. Conduct an evaluation of the benefits of an expansion to StarGarden and, if suitable, map out a revised HR systems implementation roadmap. Then:
 - 1.5.1. Hire an experienced Human Resource Information System (HRIS) / ERP Project Manager on contract for 18 months.
 - 1.5.2. Establish a new project team (e.g., Solutions Analyst, Business Analyst + Finance SME staff) to execute the HR systems work and use an agile approach to break the work into smaller work packages and deliver as fast as possible into users' hands rapid improvements to the core functionality.

- 1.6. Accept that Pearl/WorkTech is no longer considered a suitable solution for Work and Asset Management functions and instead utilize Citywide for the County's Work and Asset Management needs; integrate as necessary with Payroll and decommission Pearl.
 - 1.6.1. Hire an experienced Work Management systems Project Manager on contract for 18 months.
 - 1.6.2. Establish a new project team (TBD, to include GIS Analyst) to lead the Work and Asset Management systems work and use an agile approach to break the work into smaller work packages and deliver as fast as possible into users' hands rapid improvements to the core functionality.
 - 1.6.3. If the County cannot resource a team to execute this work at this time, wait for 12 months until the work on the Finance workstream is completed to an acceptable level and then reallocate that team to this work.
2. For the IT Review, we recommend that the County:
 - 2.1. Fill the ITS Manager/CIO position permanently in 2023.
 - 2.2. Where necessary and appropriate, convert existing contract staff in ITS to permanent positions, where possible, to establish stability and continuity.
 - 2.3. Return the Business Solutions Supervisor to their day-to-day core role – leading the Business Solutions team – including a transitional handing over of day to day project leadership to assign project teams.
 - 2.4. Add one new, permanent Solutions Analyst in 2023 to the Business Solutions team (to bring the complement to three Solutions Analysts) to provide secondary support for the implementation and subsequent operationalization of the Finance, HR and Work and Asset Management solutions, in due course.
 - 2.5. Add a Network and Technology Analyst in 2023.
 - 2.6. Add a GIS Solutions Analyst or Solutions Analyst in 2024
 - 2.7. Add a Network and Technology Analyst (or Senior position) in 2024.
 - 2.8. Develop a Corporate Technology Strategy, including revisiting the long-term ERP situation as part of the development of the Corporate Technology Strategic Plan, setting out a strategy for enhancement / replacement as required.
 - 2.9. Continue to operationalize IT Governance practices.

- 2.10. Continue to further build out the application of project management best practices.
- 2.11. Formalize the security program, with the development of a security program, alongside continued external security assessments and reporting on security strategy to IT Governance.

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