

Town of Tillsonburg IT Strategic Review - Council Update

January 13, 2014

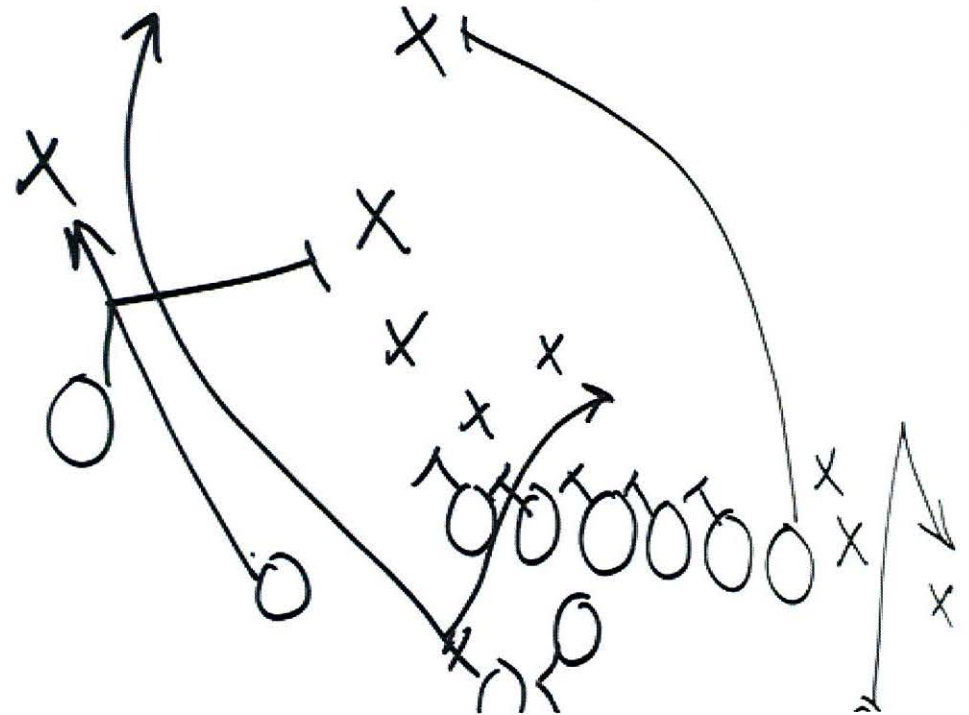


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Project overview

Project overview

Project Background	Objectives
<p>The Town of Tillsonburg has engaged Deloitte to conduct an assessment of the Town's technology controls, processes, policies and underlying infrastructure. At present the Town's IT operations are outsourced to the County of Oxford and management is looking for direction on a future IT operating model as well as ensuring current infrastructure and applications are capable of meeting the business needs of the Town. The assessment focused on the following key areas:</p> <ul style="list-style-type: none">• Applications and infrastructure;• Governance and strategy;• Information security and vulnerability; and• Disaster recovery planning.	<ul style="list-style-type: none">• Benchmarking of the Town's IT environment against comparable municipalities;• Future state IT organizational structure and governance model;• Directional hardware and software requirements;• Sustainable IT funding model;• Recommended Disaster Recovery and Record Storage Model;• Guidance on policies and procedures that should be in place to support the IT Strategy and impacted business units at the Town;• Identify the most effective strategy for meeting the Town's business needs and priorities; and• Define an action plan and roadmap for implementing that strategy

Findings summary

Drivers of the IT strategy review

Driver	Deloitte Approach and Findings
<p>Infrastructure Investment in physical IT infrastructure has been neglected at the Town for several years</p>	<ul style="list-style-type: none"> • Engagement with County IT staff and Town staff • A key theme was significant lost productivity on the part of Town staff due to frequent workstation and server downtime or slow performance. • Total lost productivity reported was 1 – 3 hours per employee per week. • Significant time spent by IT resources maintaining the server infrastructure and managing storage to ensure systems stay operational.
<p>Applications There is limited understanding of whether the Town’s current applications meet functional needs</p>	<ul style="list-style-type: none"> • Application functionality within the major applications is sufficient to meet current business needs. • Some current applications could be consolidated into fewer larger hardware platforms to improve performance and reduce maintenance, while still enabling redundancy. • Management has initiated CityWide as the primary fixed asset management system to achieve alignment across the Town.
<p>Governance and Strategy The Town is in a state flux with regards to its operating model (short term arrangement with the County of Oxford). There is limited definition of IT governance.</p>	<ul style="list-style-type: none"> • Benchmarking of the Town’s budgetary and IT organizational model to determine a suitable go forward strategy. • Of the municipalities consulted for benchmarking all had primarily in-house IT services.
<p>Information security and vulnerability Given the age of infrastructure and change in operating model there is uncertainty around whether security gaps exist to current systems.</p>	<ul style="list-style-type: none"> • Deloitte conducted internal and external testing of the Town’s network using VA tools including QualysGuard and other tools, as well as manual verification. • Several weaknesses in the current system were noted primarily due to the age of infrastructure and application areas.
<p>Disaster recovery planning There is limited redundancy, data backup, or business continuity currently in place.</p>	<ul style="list-style-type: none"> • Deloitte reviewed system documentation and interviewed IT and functional staff to determine the current state of disaster recovery planning. There is currently a high risk of data loss due to the lack of data protection practices in place.

Current high risk areas

As part of the review Deloitte identified four high risk areas which should be addressed by the Town in the short term. These areas have the potential to significantly impact IT operations and service delivery to constituents if not prioritized for short term action.

- **Security and network vulnerability** – There are significant weaknesses within the Town’s network largely due to its aging infrastructure and systems.
- **Non-compliance of software licenses** – Current Microsoft licenses are out of date at both the operating system and desktop application level. The Town has initiated a license audit which will assist in gathering an inventory of all Microsoft office and operating system installs and standardize versions while working with the vendor to update licenses.
- **Staff productivity - aged hardware infrastructure (servers and workstations)** – The age of server and workstation infrastructure results in poor performance, and risk of imminent failure. Server performance is similarly poor with frequent downtime and impacts to application performance. Downtime impacts of 1 – 3 hours per employee results in lost productivity of \$384,000 annually*.
 - The Town lacks the ability to upgrade certain applications due to out dated server configurations.
- **Disaster recovery** – There is a lack of redundancy across the current architecture resulting in high risk of data loss. In the event of a disaster the Town has no business continuity capabilities outside of fully manual operations. Redundancy should be built in with the server replacement exercise recommended as part of the hardware refresh initiative above.

*Based on 80 employees and an average fully loaded FTE cost of \$50/hr.

Summary recommendations

Driver	Summary recommendations
<p>Infrastructure Investment in physical IT infrastructure has been neglected at the Town for several years</p>	<ul style="list-style-type: none"> Invest in upgrading its server and end user hardware in the short term. Management has initiated a workstation refresh and continued priority should be given in this area.
<p>Applications There is limited understanding of whether the Town’s current applications meet functional needs</p>	<p>An in-depth application architecture strategy is recommended to assess:</p> <ul style="list-style-type: none"> Where common applications can be rationalized; Where additional functionality is required; and Where County applications can be leveraged.
<p>Governance and Strategy The Town is in a state flux with regards to its operating model (short term arrangement with the County of Oxford). There is limited definition of IT governance.</p>	<ul style="list-style-type: none"> Continue to work with the County while ensuring strong internal IT management capabilities within the senior management group.
<p>Information security and vulnerability Given the age of infrastructure change in operating model there uncertainty around whether security gaps exist to current systems.</p>	<ul style="list-style-type: none"> Significant gaps should be addressed in the short term.
<p>Disaster recovery planning There is limited redundancy, data backup, or business continuity currently in place.</p>	<ul style="list-style-type: none"> As part of the hardware refresh and system architecture migration basic redundancy should be put in place in the short term. Over the medium to long term a business impact analysis and detailed disaster recovery plan should be formed.

Short term priority items

Gaps requiring immediate attention to limit risks to the organization and overall constituent service include:

- **Hardware refresh**
 - End user systems: Due to the age of and lack of reliability, replacing end user systems will increase productivity by reducing downtime and waiting time, as well as reducing help desk calls.
 - Infrastructure: Updating core infrastructure components and re-designing system addressing schemes (in progress) will improve network infrastructure performance.
- **Email migration**
 - The current email system is inefficient and out of date. Upgrading the infrastructure will reduce downtime, system management effort
- **Server architecture**
 - Virtualization: Virtualization technology will enable redundancy and consolidation of systems, as well as optimize hardware usage.
 - Redundancy: The ability to fail over or reinitialize servers on redundant hardware will improve the reliability of the town systems. As noted, virtualization enables redundancy without significant hardware purchase.
 - Consolidation: Consolidation of databases, email and other applications into common, redundant systems simplifies system maintenance and can reduce licensing costs.
- **IT governance** aspects such as oversight, policies and procedures should be developed and implemented.
- An **application strategy** is recommended to ensure current investments are being appropriately leveraged and necessary functionality is being delivered.
- **Disaster recovery/business continuity** - short term focus should be on building redundancy as part of the hardware refresh.

Roadmap and costing

5 year roadmap

The roadmap below presents the initiatives recommended for the Town over 5 years in order to achieve stability in IT operations and reach the target maturity levels recommended. A disproportionate amount of effort and cost is allocated in the first two years of the plan in order to mitigate the high risk areas facing the Town as highlighted on slide 7 above. Determining a preferred operating model (initiative 7.1) and developing and implementing an IT governance section (initiative 1.1) will help to further refine the scope and timing of the remaining recommended initiatives.

Thread/ Year	2014		2015		2016		2017		2018		
	Jan - Jun	Jul - Dec	Jan - Jun	Jul - Dec	Jan - Jun	Jul - Dec	Jan - Jun	Jul - Dec	Jan - Jun	Jul - Dec	
1.0 Governance	1.1 Develop and implement IT governance structure										
2.0 Network		2.1 Network baseline	2.2 Upgrades, replacements and maintenance								
3.0 Servers	3.1 Target architecture	3.2 Architecture migration				3.3 Maintenance and refresh					
4.0 End user computing	4.1 Workstation refresh 4.1.1 Mobility updates			4.2 Maintenance and refresh							
5.0 Applications	5.1 Application strategy		5.2 Application enhancement and rationalization				5.3 Strategic enhancements				
6.0 Systems Management	6.1 IT asset management		6.2 Conduct business impact analysis (BIA) and design and implement disaster recovery plan (DRP)				6.3 Ongoing capacity management				
7.0 Organization	7.1 Operating model decision	7.2 Staff training (end user + functional power users)									

Cost summary (hardware, software, and licensing)

The table below summarizes the capital impact of the recommendations outlined in this report. A significant capital investment must be made in the first two years to mitigate the risks currently facing the Town.

Item	2014	2015	2016	2017	2018
2.1 & 2.2 Network baseline/upgrades	55,000	5,000	5,000	5,000	5,000
3.1 Target server architecture	-	-	-	-	-
3.2 Architecture migration	40,000 – 60,000	-	-	-	-
3.3 Server maintenance and refresh	15,000 – 20,000	10,000 – 15,000	10,000 – 15,000	10,000 – 15,000	10,000 – 15,000
4.1 Workstation refresh	120,000 - 150,000	-	-	-	-
4.1.1 Mobility updates	25,000 - 40,000	5,000 – 10,000	5,000 – 10,000	5,000 – 10,000	5,000 – 10,000
4.2 End user maintenance	-	20,000 – 30,000	20,000 – 30,000	20,000 – 30,000	20,000 – 30,000
5.2 Application enhancement	-	30,000 – 40,000	-	-	-
5.2.1 Email replacement	40,000 – 60,000	-	-	-	-
Total hardware and software	\$295,000 – \$395,000	\$70,000 – \$100,000	\$40,000 – \$60,000	\$40,000 – \$60,000	\$40,000 – \$60,000

Current 2014 placeholder costs The town has currently allocated \$634,700 for various hardware, application and licensing costs. The overall cost meets the required spend for 2014 and 2015. However the pace and overall allocation will need to be evaluated by management based on the recommendations of this IT strategy.	Item	2014 budget (placeholders)
	Licensing/maintenance contracts	\$319,200
	Other	\$7,500
	Workstation Refresh	\$80,000
	Server	\$150,000
	Laserfische	\$28,000
	Strategic plan implementation	\$50,000
	Total	\$634,700

Cost summary (resourcing)

The table below summarizes the budget impact for staff or contract resources to execute the recommendations outlined in this report. This is the expected increase in budget over the current budget costs for the IT infrastructure. As most of these costs are one time project costs, the best funding is for most of the costs is as specific projects.

Item	2014	2015	2016	2017	2018
1.1 Develop and implement IT governance structure	50,000	25,000			
2.1 & 2.2 Network baseline/upgrades	45,000	-	-	-	-
3.1 Target server architecture	25,000	-	-	-	-
3.2 Architecture migration	25,000	50,000	-	-	-
4.1 Workstation refresh	25,000	-	-	-	-
4.1.1 Mobility updates	25,000	-	-	-	-
5.1 Application strategy	60,000 – 80,000	-	-	-	-
5.2 Application enhancement	-	25,000	10,000	-	-
5.3 Strategic enhancements	-	-	-	300,000	300,000
5.2.1 Email replacement	50,000	-	-	-	-
6.1 IT asset management	-	-	-	-	-
6.2 BIA and DRP	-	50,000	30,000	-	-
Total resource	\$305,000 - \$325,000	\$150,000	\$55,000	\$300,000	\$300,000

Current 2014 placeholder costs	Item	2014 budget place holder
The town has currently held \$72,000 resourcing cost for county payments. Overall resourcing costs will need to be evaluated in order to effectively execute on the recommendations in the IT strategic plan. Some re-allocation from hardware, software, and licensing costs may need to be considered.	Consultant/contractor	-
	Payments to County	\$72,000
	Employee	-
	Total	\$72,000

Current budgetary placeholders

Town management developed budgetary estimates for 2014 prior to the development of the IT strategic plan. Management will re-evaluate the overall allocation of funds to align with the strategy for 2014 and beyond. The forecasted start date of the initiatives recommended in the strategic plan and work initiated in 2013 will impact the overall allocation and timing of spend.

A key area for consideration is allocating sufficient funds for people resources, whether through the County or contractors to complete the recommended initiatives.

Year	IT Strategy Recommendations			Current Town Placeholders		
	Hardware, software, licensing	Resourcing	Total	Hardware, software, licensing	Resourcing	Total
2014	\$295,000 – \$395,000	\$305,000 - \$325,000	\$600,000 - \$720,000	\$634,700	\$72,000	\$706,700
2015	\$70,000 – \$100,000	150,000	\$220,000 - \$250,000	TBD	TBD	TBD
2016	\$40,000 – \$60,000	\$55,000	\$95,000 - \$115,000	TBD	TBD	TBD
2017	\$40,000 – \$60,000	\$300,000	\$340,000 - \$360,000	TBD	TBD	TBD
2018	\$40,000 – \$60,000	\$300,000	\$340,000 - \$360,000	TBD	TBD	TBD
Total	\$485,000 - \$675,000	\$1,110,000 – \$1,130,000	\$1,595,000 - \$1,805,000	\$634,700	\$72,000	\$706,700

IT operating model options

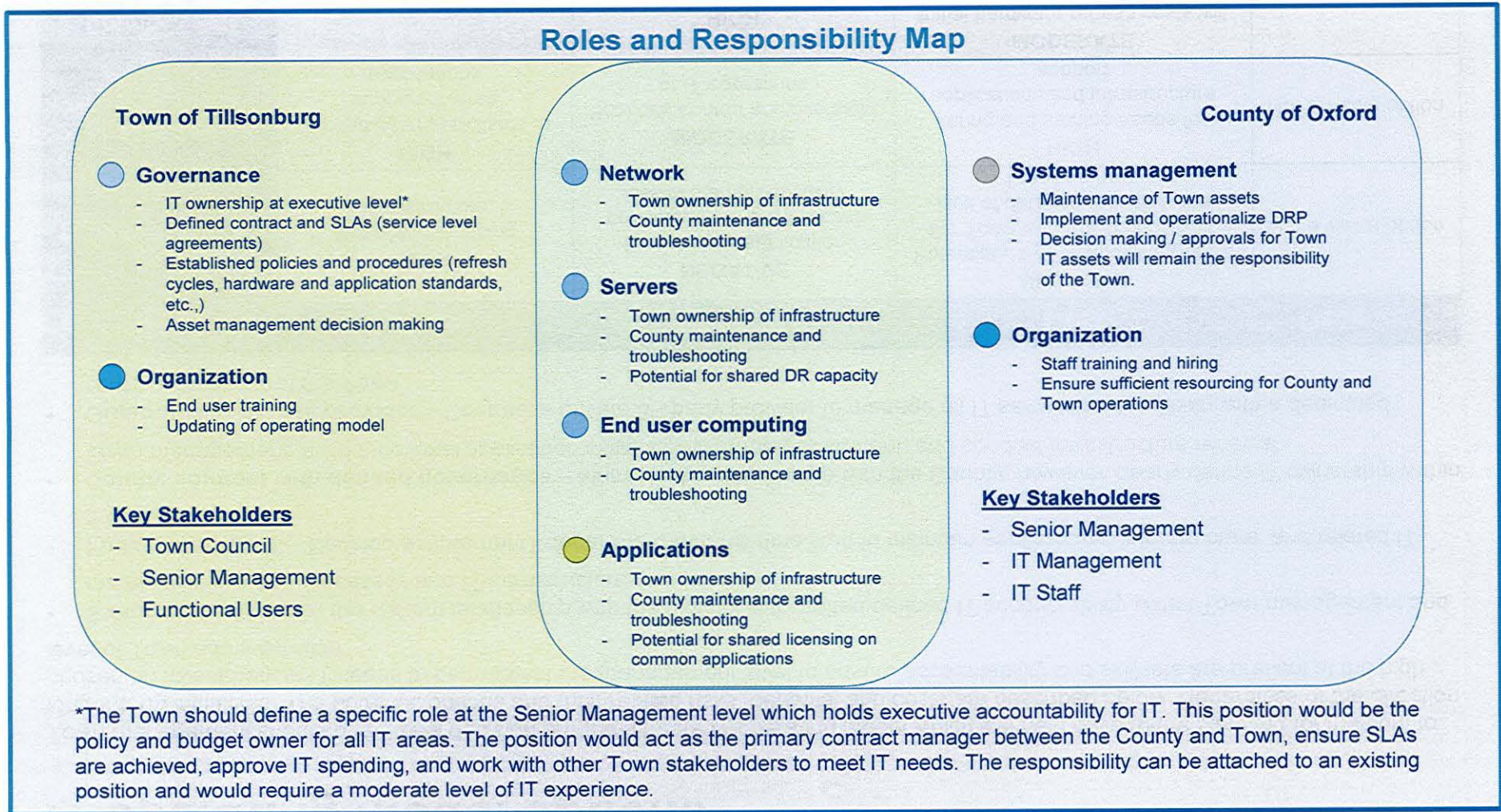
Town management should prioritize a decision around a future IT operating model which will help drive future planning for medium to longer term initiatives. The potential options and their related risks, benefits, and costs are described below. Regardless of the direction chosen an investment in IT needs to be made at the management level to ensure accountability and skillsets are present at the high level of Town administration.

- **Status quo** – Maintain the current relationship with the County with limited defined IT accountability within Town management and maintaining existing processes and IT infrastructure.
- **Fully in-source IT** – Develop an internal IT department with full time staff to maintain applications, infrastructure, and related IT processes.
- **County contract with defined governance** – Maintain the relationship with the County, however clearly define IT ownership within Town management, build functional application skillsets within the department, and conduct infrastructure renewal.
- **Outsource to private provider** – Contract a private 3rd party provider to manage all IT servers for the Town with a dedicated contract manager at the Town.

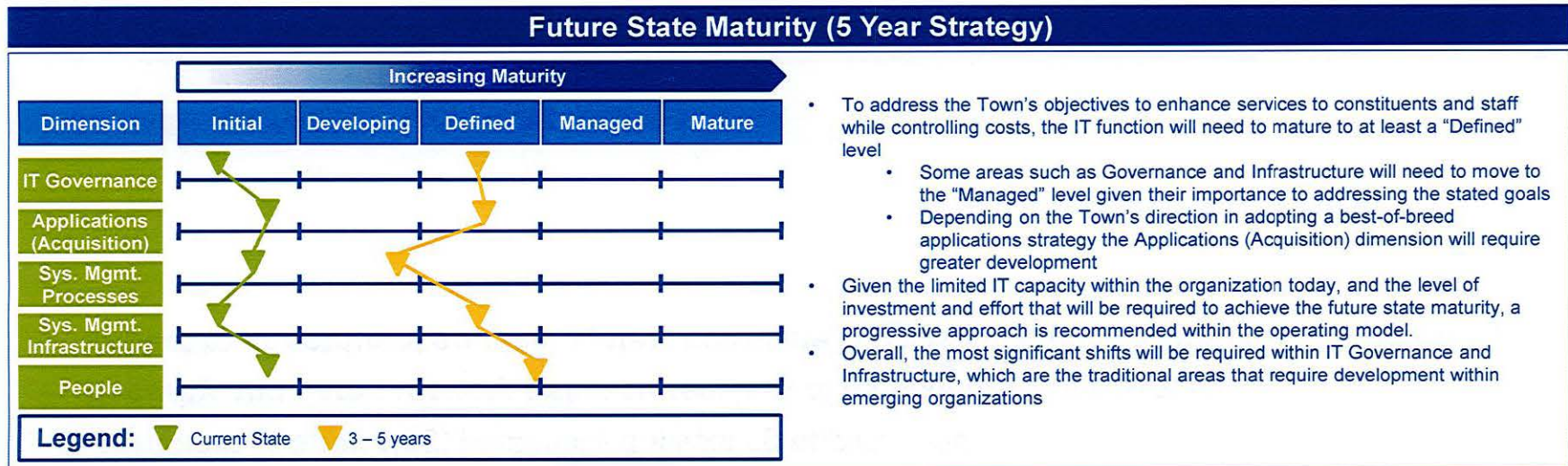
Option	Risk	Benefits	Cost	Decision
1. Status Quo	HIGH Not scalable, aging infrastructure	NEGATIVE Potential for application proliferation and significant loss of staff productivity	NEGATIVE Potentially high financial impact to the Town with lost productivity, lack of data redundancy, and licensing risks	Not a viable option
2. Fully in-source IT	HIGH Limited internal skillsets to support diverse applications	MODERATE Provides control and oversight of IT operations	HIGH Hiring and training needs for applications and infrastructure support	Not a viable option
3. County contract with defined governance	LOW Current working relationship,	HIGH Leverage County skillsets, potential to leverage applications and reduce costs	MODERATE Initial hardware refresh costs will be high however longer term costs can be controlled with shared service opportunities	Pursue in 3-5 year term
4. Outsource to private provider	HIGH Few providers for municipal space in the region	MODERATE Ability to immediately adopt leading practices	HIGH There are limited providers in the Municipal space.	Not a short term option

IT operating model recommendation

- The Town should continue to engage the County for IT services with an enhanced governance framework. This should re-evaluated within 3-5 years as the Town completes its major upgrade initiatives to attain baseline operations.



Targeted future state of IT



Maturity Model – Definitions

The maturity model, a standard tool for effectively assessing an organization's IT capabilities, is used to illustrate the current state maturity ranking of the Town across each of the components of the IT Operating Model

Increasing Maturity				
Initial	Developing	Defined	Managed	Mature
<ul style="list-style-type: none"> Processes are disorganized, even chaotic Processes are not sufficiently defined and / or documented Success is dependent on individual efforts, and is not considered to be repeatable No tools in place Roles / responsibilities are loosely defined 	<ul style="list-style-type: none"> Basic repeatable processes are established but are not applied consistently Limited formal communication of processes or policies and procedures Tools introduced to enable operations Basic definition of roles / responsibilities 	<ul style="list-style-type: none"> Processes are formalized through documentation, standardization, and integration Policies and procedures are in place along with training to relevant stakeholders Tools are in place to support processes Roles / responsibilities are formally defined 	<ul style="list-style-type: none"> Process / performance benchmarks and KPIs are established Performance monitoring and continuous improvement is introduced Consistent tool utilization Resources are aligned against repeatable processes with documented roles / responsibilities 	<ul style="list-style-type: none"> Proactive management of performance and focus on continuous improvement Consistent and repeatable application of processes across the organization Proactive review of tools performance Full resource alignment against processes and performance management aligned roles

Conclusion

- **Key benefits**
 - Direct impact to **staff productivity** and constituent service
 - **Modernize system architecture**; higher efficiency machines at lower maintenance costs going forward
 - **Long term sustainability** of IT organization; ensuring IT spend meets business and community needs
- **The risks of doing nothing**
 - **Inefficient IT spending**; potentially duplicating applications
 - **Security and data recovery risks**; current lack of redundancy in the system
 - **Impact to constituent service**; system downtime impacts the organizations overall productivity

Deloitte.

