TOWN OF WAYLAND

Town IT Rapid Assessment

October 2015

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EXECUTIVE SUMMARY

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Executive Summary
Assessment Goals and Objectives

RSM completed a three-year master plan for the Town of Wayland, focusing on the Town's IT capabilities, and recommended future-state goals. The assessment analyzed the Town's IT organization, management processes, infrastructure and business systems in order to identify the following recommendations for both the short and long-term:

- IT Strategy, Leadership and Organization
- Core Applications and Systems
- Communications
- Network and Remote Office Access
- Network Protocol and Data Security
- IT Policies and Procedures

Project Objectives and Deliverables

- ✓ Identify areas to increase automation and efficiency through the use of technology
- ✓ Develop recommendations to ensure that the Town of Wayland will maintain a stable IT organization
- ✓ Provide investment and timeline estimates for immediate and long-term solutions
- ✓ Design sample written IT and data security policies & procedures

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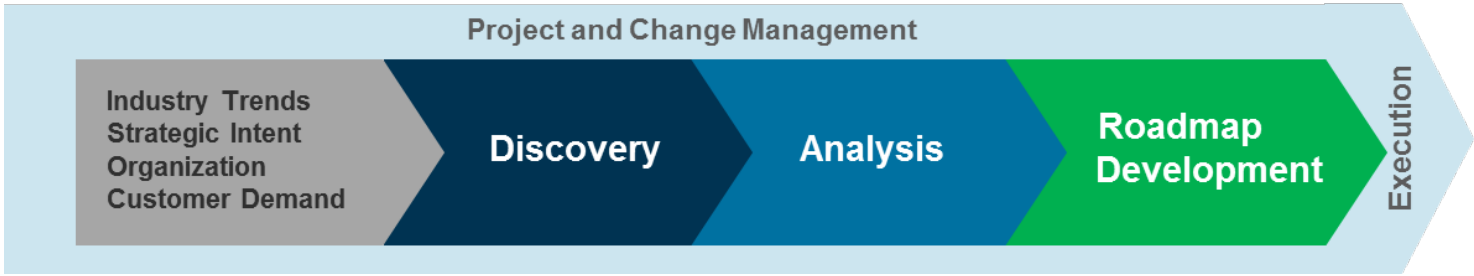
Executive Summary
Assessment Approach

In order to carry out the previously-stated goals and objectives, RSM followed a three-phase approach to complete its assessment of the Town of Wayland's IT function; while the schools were included in shared services observations & recommendations, the engagement focused primarily on the Town's IT services. The assessment approach and the respective components of the assessment are summarized as follows:



	Discovery Phase	Analysis Phase	Roadmap Development Phase
IT Rapid Assessment • IT Strategy, Leadership and Organization • Core Applications and Systems • Communications (Phone Systems, Cell and Mobile Applications) • Network and Remote Office Access (WAN, LAN and Wireless) • Network Protocol and Data Security • IT Policies and Procedures	• Interview key IT and department process owners • Provide web IT survey for employees • Review existing documentation developed by Town of Wayland staff supporting operations, IT strategy, security protocols, policies and procedures • Review of IT infrastructure, including storage, servers, desktops and networks • Review of IT organization and vendor relationships • Document noted issues, opportunities and gaps • Shadow key business process owners	• Evaluate business needs and document key requirements • Assess operational processes and systems and compare existing workflows to leading practices • Assess current application infrastructure and define opportunities/limitations • Analyze the existing IT organization and leadership • Analyze performance against IT performance benchmarks • Analyze risks related to the current IT environment • Evaluate business and financial controls • Perform a high-level assessment of potential alternative models	• Complete an assessment deliverable, including: o Observations from assessment o Documented issues and impacts o Strategic alternatives and recommendations o Long-term IT Roadmap, IT resource demand and investment estimates o Sample security policies and procedures • Present findings and recommendations

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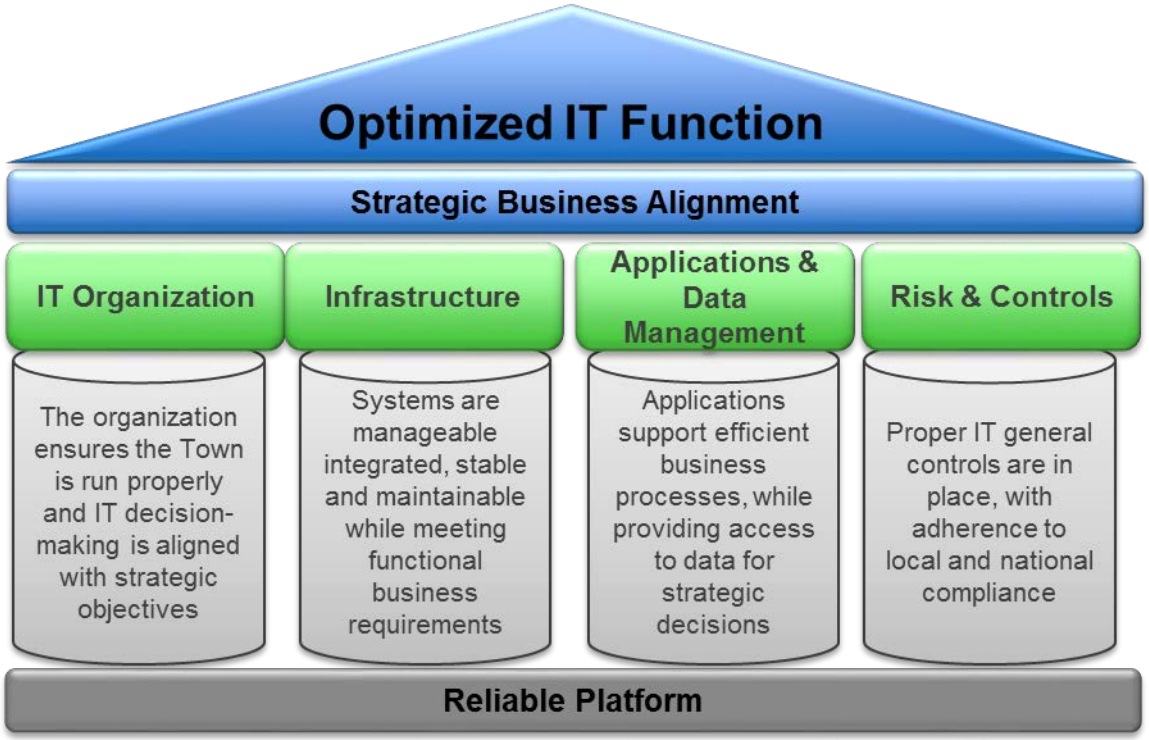
Executive Summary
Project Overview – Pillars of IT

An optimized IT function focuses on creating productivity and capabilities in support of strategic business goals. It has clearly-defined, well managed '***Pillars of IT***': IT organization, infrastructure, applications & data management, and risk & controls. These pillars are supported by a reliable platform and align with strategic business goals in order to create an optimized IT function.

These pillars were used as the basis to evaluate the IT organization at the Town of Wayland; the findings of the assessment will be categorized accordingly.



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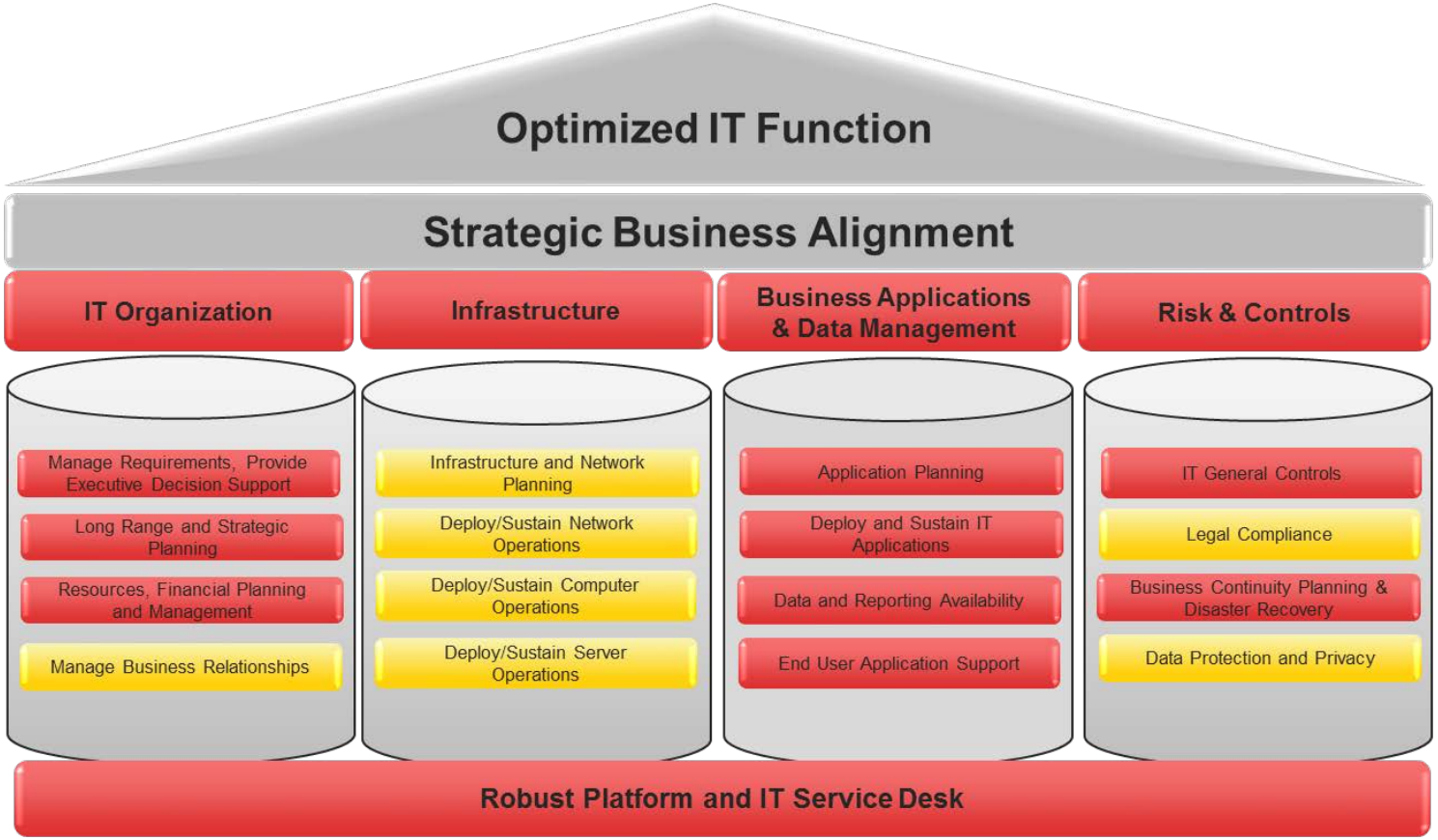
Executive Summary
Pillar of IT – Maturity Levels

Key
Low Maturity
Medium Maturity
High Maturity

Based on our assessment, RSM rated the maturity of the components of the Town of Wayland's IT function as follows:



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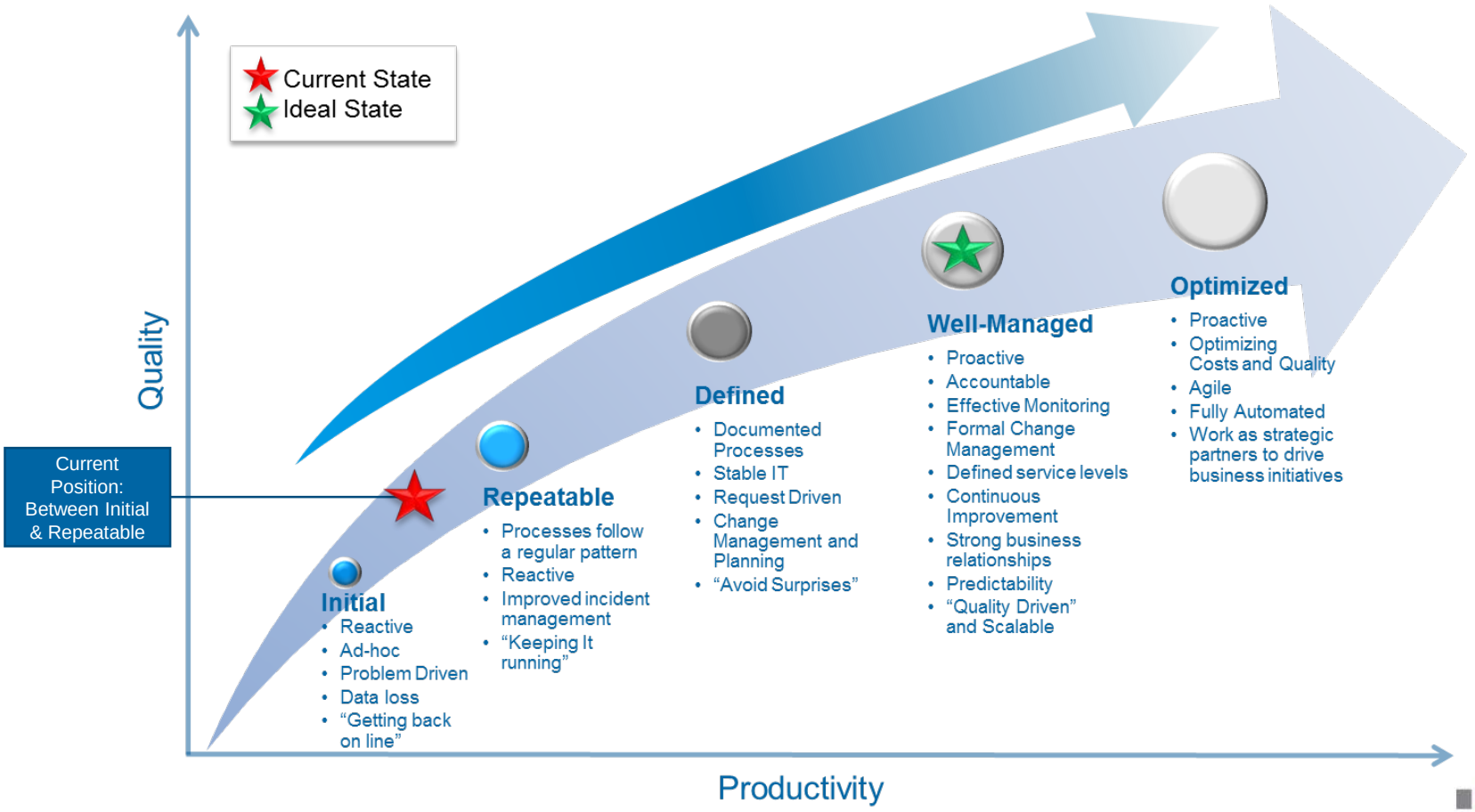
IT Maturity Model – Current & Future State

Town IT is currently a reactive organization that does well with keeping the lights on but with limited strategic long-term planning. The future state of the Town's IT should be "Well-Managed".



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Executive Summary
Current State Findings

Town IT Organization

- The current IT support model does not sufficiently support business operations; internal IT communications lack a formal, documented process and defined standards of service, leading to unclear guidelines for requesting IT support
- Despite centralized IT budget between School and Town, there is no Strategic Director and limited collaboration between departments, complicating allocation and identification of departmental needs
- Due to shared services, resources, and a lack of resources focused on Town IT solution need, the School's IT organization is spread thin and cannot appropriately focus on strategic academic investments while governing the Town's IT strategy
- There is no formal management of MUNIS, the Town's primary application
- IT staffing does not receive regular training to remain abreast of technology changes

Applications and Data Management

- The current version of MUNIS is not supported by Tyler Technologies, lacks cross-system integration, resulting in manual, paper business processes
- Information does not integrate with MUNIS, which lacks data bridges with key applications (e.g. GIS and Vadar), leading to duplicative entry
- MUNIS is not used to its full capacity due to a lack of end-user training and formal systems administrator
- GIS tools and data layers are not regularly leveraged uniformly across all Town departments
- Documents are managed both physically and across network folders with limited collaboration, which has resulted in multiple redundant manual processes
- The Help Desk tool does not meet the Town's survey end user needs, lacks clear reporting tools and provides no change management functions

Joint Infrastructure

- Strategic planning is limited and could be enhanced by collaboration among the proposed IT Review Team and IT Support Group
- Departments expressed a backlog of IT requests that have not been addressed, both tactical and strategic
- The existing firewalls are approaching peak CPU load and are not capable of providing next-generation security measures; there has been no independent penetration testing
- 30+ Network switches are approaching end of life
- The School-side SANs have reached end-of-life and are near capacity, forcing the department to leverage Town-side SANs
- Many of the Town's current operating systems (including core servers such as Exchange email and AD) are no longer supported or updated by Microsoft, leading to application incompatibility and security concerns

Risk and Controls

- The shared IT organization does not have enough resources to proactively monitor, manage and support the entire network
- The Town lacks a formal security plan and documented IT policies & procedures for incident prevention and disaster recovery
- Formal security awareness training must be continued to be provided on an annual basis to Town employees
- Process controls are not consistent across departments despite many manual workflows
- The Town does not currently use any formal, documented change control processes for system and security changes

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Executive Summary
IT Spend Benchmarking & Analysis

The Town of Wayland should increase IT spending in proportion to current revenue in order to scale with the organization. Specifically, funds should be allocated to align the town with industry leading practices with respect to hardware, software, security and personnel; however, funds should be allocated appropriately with the Town of Wayland's strategic vision. Percentage of IT spend decreased from the last study completed in 2010.

Town of Wayland		% Revenue	Industry Average**	*Difference*
Revenue (2014)	IT Spend (2014)			
$82,308,882	$1,060,144	1.3%	3.6%	**-2.3%**

*This data was extracted from MUNIS and provided by the Town of Wayland; it represents combined operating budget for School & Town. Industry data from Gartner**

Key Observations

- The Town is significantly underspending on software, which is evident in the lack of application support, training and severe under utilization of the primary business application, MUNIS.
- The Town should invest in strategic IT resources that can alleviate several major gaps within the organization—namely a formal Executive IT Director that oversees strategic IT initiatives for the Town and a Business Systems Administrator that would provide support and tactical guidance for departmental IT solutions, first focusing on MUNIS (first 12-18 months) and then expanding to other applications.
- There is significant "IT Debt" that the Town will need to incur in several areas before the IT function can expect similar, long-term fund allocations, explicitly in the areas of security, storage, and applications.
- Many IT Salaries are under market pay rates.

**Gartner Reports:*

- *Hall, Linda; Futela, Shreya; & Gupta, Disha (2014, December 15).* IT Key Metrics Data 2015: Small and Midsize Enterprise Executive Summary *(ID: G00265997). Retrieved from Gartner database*
- *Hall, Linda; Futela, Shreya; & Gupta, Disha (2014, December 15).* IT Key Metrics Data 2015: Key Industry Measures: Government State and Local Analysis: Multiyear *(ID: G00266024). Retrieved from Gartner database.*

***Industry average is a reallocation of current spend, based on leading practices, NOT a specific investment recommendation*

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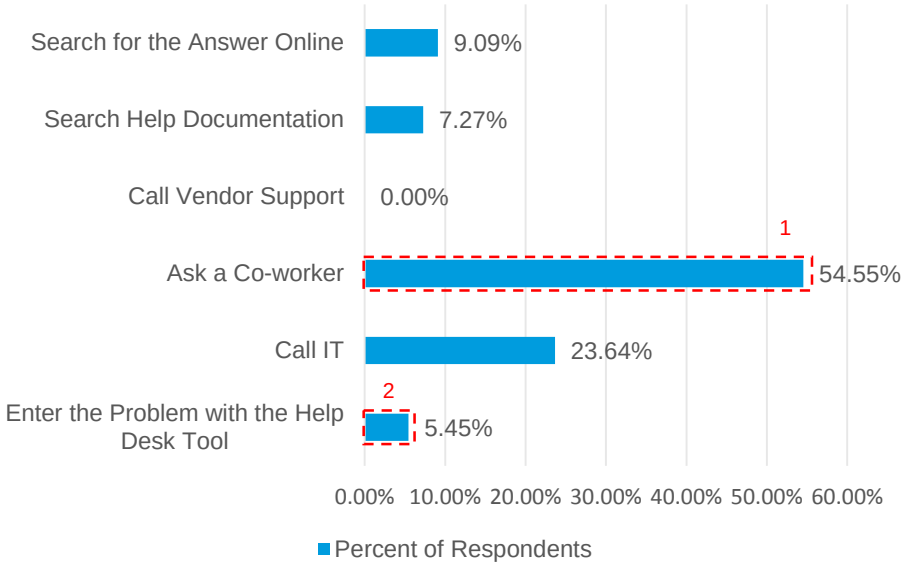
Executive Summary

Survey Results – User Satisfaction & Productivity Needs

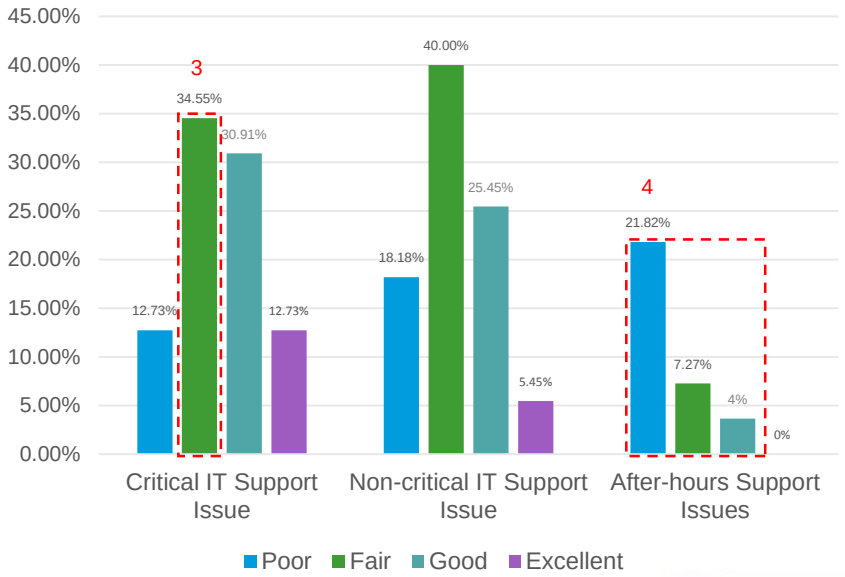
Based on an IT Temperature Check Survey, Town of Wayland respondents indicated the following regarding technology and business performance:

- 29 of the respondents (roughly 53%) felt that their current tools did not well support their ability to work efficiently.
- Roughly 46% of respondents did not feel that they had received sufficient training on the applications they need to use or complete their daily duties; only 11 end users (20% of respondents) had received effective training.
- Roughly 70% of respondents were not certain that IT issues would be resolved in a timely manner.
- When users commented on the Town's IT Organization, areas of focus trended toward improved strategic direction, training, customer service & issue resolution, overall communication and a need for Town-centric IT support.

End-user IT Issue Resolution Approaches



IT Responsiveness, by Issue Type



1. When employees seek issue resolution from coworkers, IT is not able to capture the issue and cannot standardize a solution
2. This creates an inefficiency because IT staff is forced to enter a ticket; when end-users enter tickets with the Help Desk Tool, they reduce staff time and help to create standardized solutions
3. Opportunities exist to enhance support for critical issues, which could potentially affect Town business
4. 33% of respondents to this question identified a need for after-hours support

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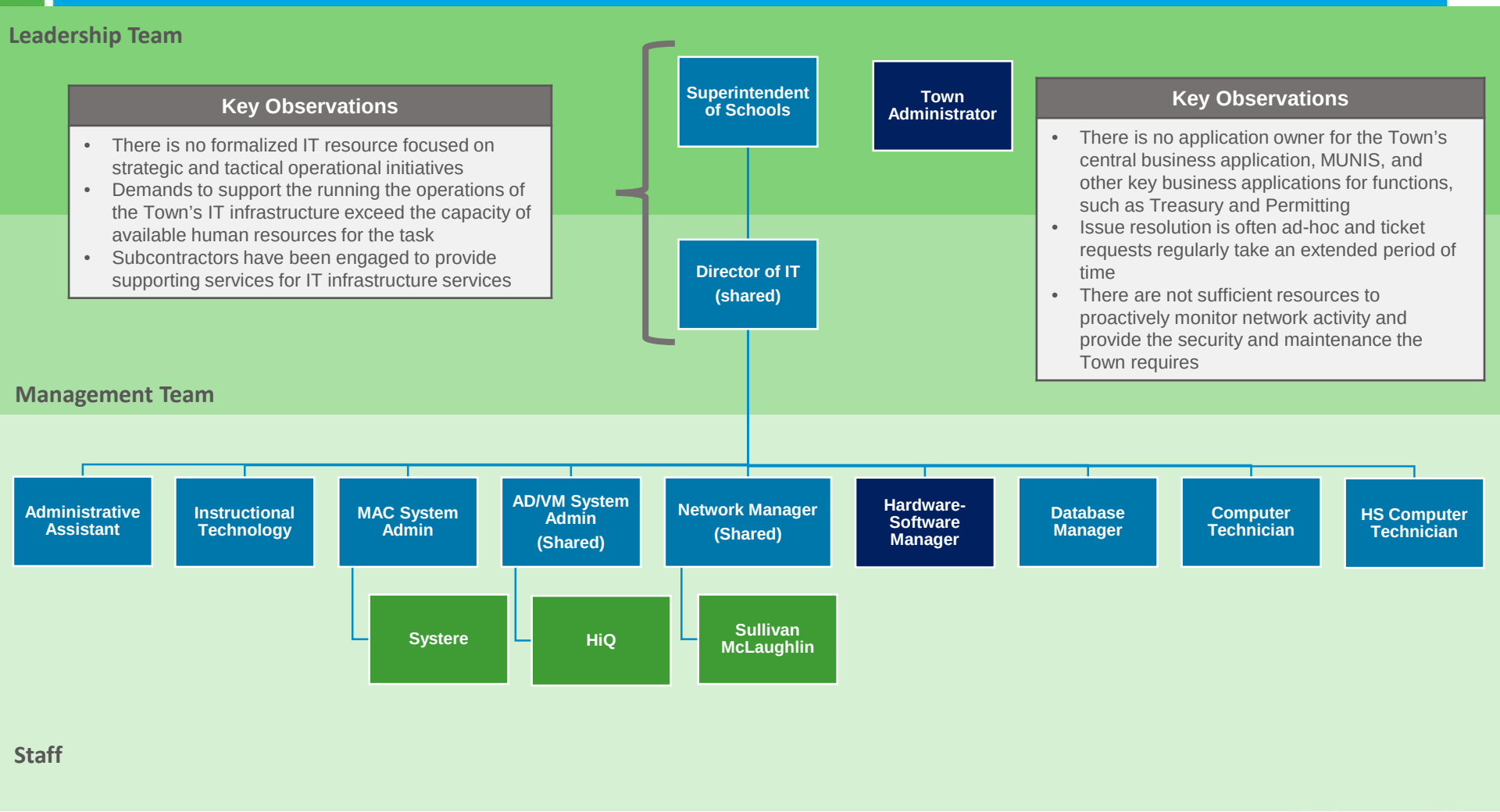
IT Organization – Current State Overview



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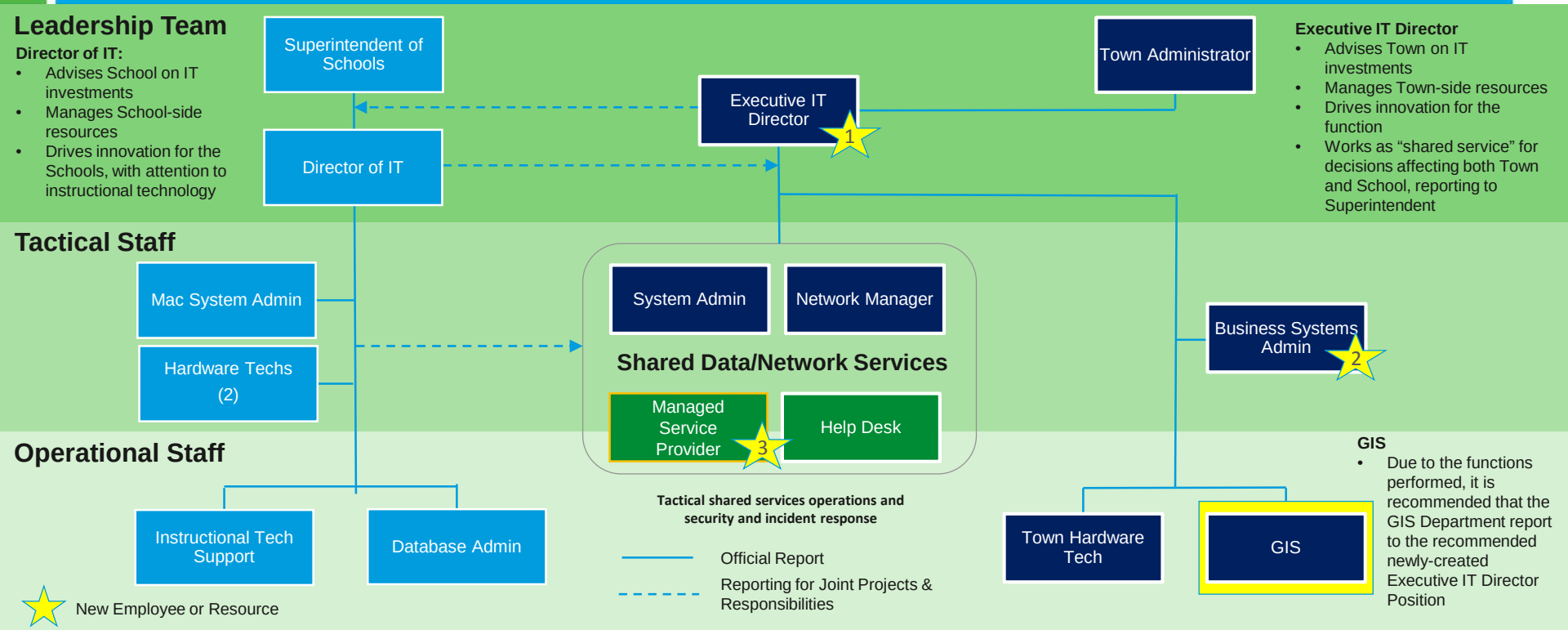
IT Organization – Proposed Future State



Recommendations
1. Create Executive IT Director role to spearhead town and shared infrastructure initiatives. Onboarding a strategic IT Leadership position for the Town will provide autonomy for both the Town and the Schools
2. The full-time Business Systems Administrator position will initially provide ownership to the main business application MUNIS from a support, development and operational standpoint and then expand to other departmental solutions
3. Retaining a Managed Service Provider will not only enhance functional maintenance activities but significantly increase security, testing, and align Wayland with industry leading practices by providing technical oversight monitoring

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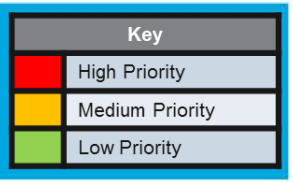
Executive Summary

Salaries and Outsourced Provider Cost Estimate



The following table highlights organizational recommendations with reference to their respective priority and numerical placement on the overall Recommendations Roadmap. Recommendations to provide outsourced and internal staff resources were identified as a high priority.

The salaries represent annual operational costs based on the standard current cost analysis range for the Greater Boston Area.

Ref	Issue	Priority	Low	High	ERI Median**
1A	Outsource Managed Services	High	$90,000	$110,000	N/A (External Position)
1G	Executive IT Director	High	$100,000	$125,000	$121,963.00
2A	Business Systems Administrator	Medium	$68,000	$85,000	$69,411.00

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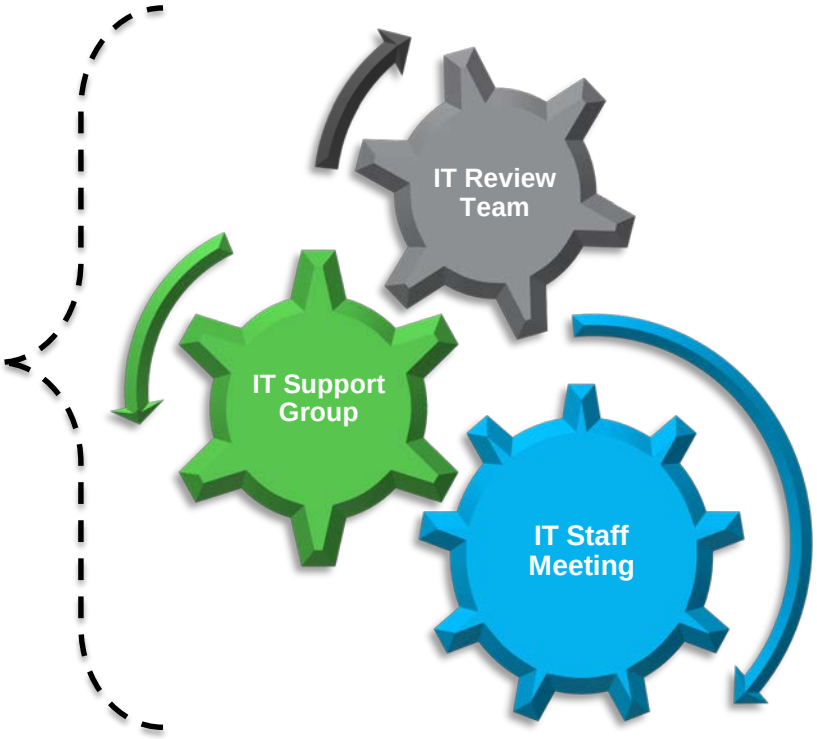
Executive Summary

Recommended IT Review Team and IT Support Group

Foster a culture to engage key town employee stakeholders in a shared vision for enabling IT to be a supportive tool in enhancing services and improving efficiency

Business Strategy Alignment

Shared IT Organization



IT Review Team

- **Schedule**: Quarterly
- **Participants**: Town and School Employees: Town Administrator, Superintendent, Executive IT Director, School IT Director, Town Department Heads, Procurement
- **Goal**: The Town and School inform IT of what is important, IT updates organization on state of IT, upcoming projects, etc.

IT Support Group

- **Schedule**: Monthly meetings
- **Participants:** Executive IT Director, School IT Director, Business Analyst, Managed Service Provider, Hardware-Software Manager
- **Goal**: Update IT Directors on status of current projects, upcoming projects, risks, etc.

IT Staff Meeting

- **Schedule**: Bi-weekly meetings
- **Participants**: Executive IT Director, School IT Director, IT Staff, Managed Service Provider
- **Goal**: Weekly updates of team member projects, schedules, help desk statistics, issues/risks

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Source: *Gartner Research, IT Key Metrics Data: Small and Midsize Enterprises, 2015*

RECOMMENDATIONS AND ROADMAP

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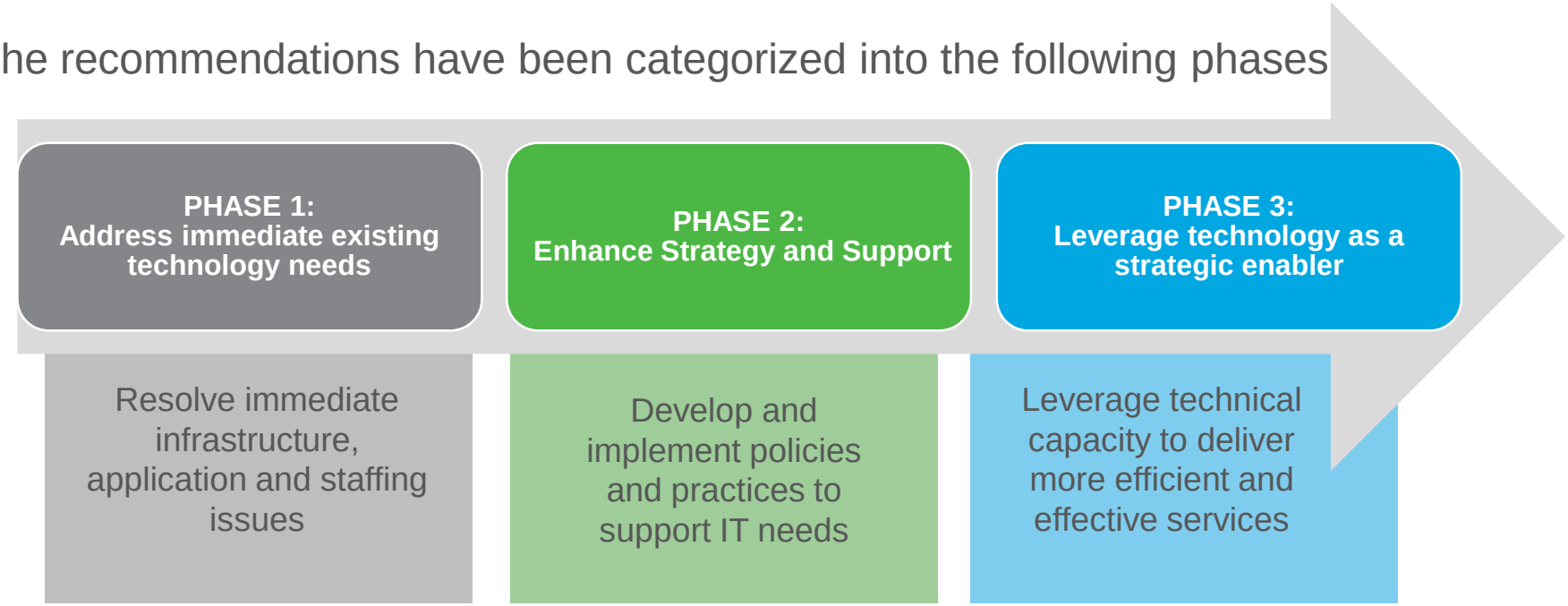
Recommendations and Roadmap

The subsequent recommendations are actions that the Town of Wayland can take to transform from the current state to a well-managed, balanced IT function, with enhanced leveraging of people, processes and technology to reduce manual processes, deliver improved services, and provides greater agility and visibility into the Town.

The recommendations have been categorized into the following phases



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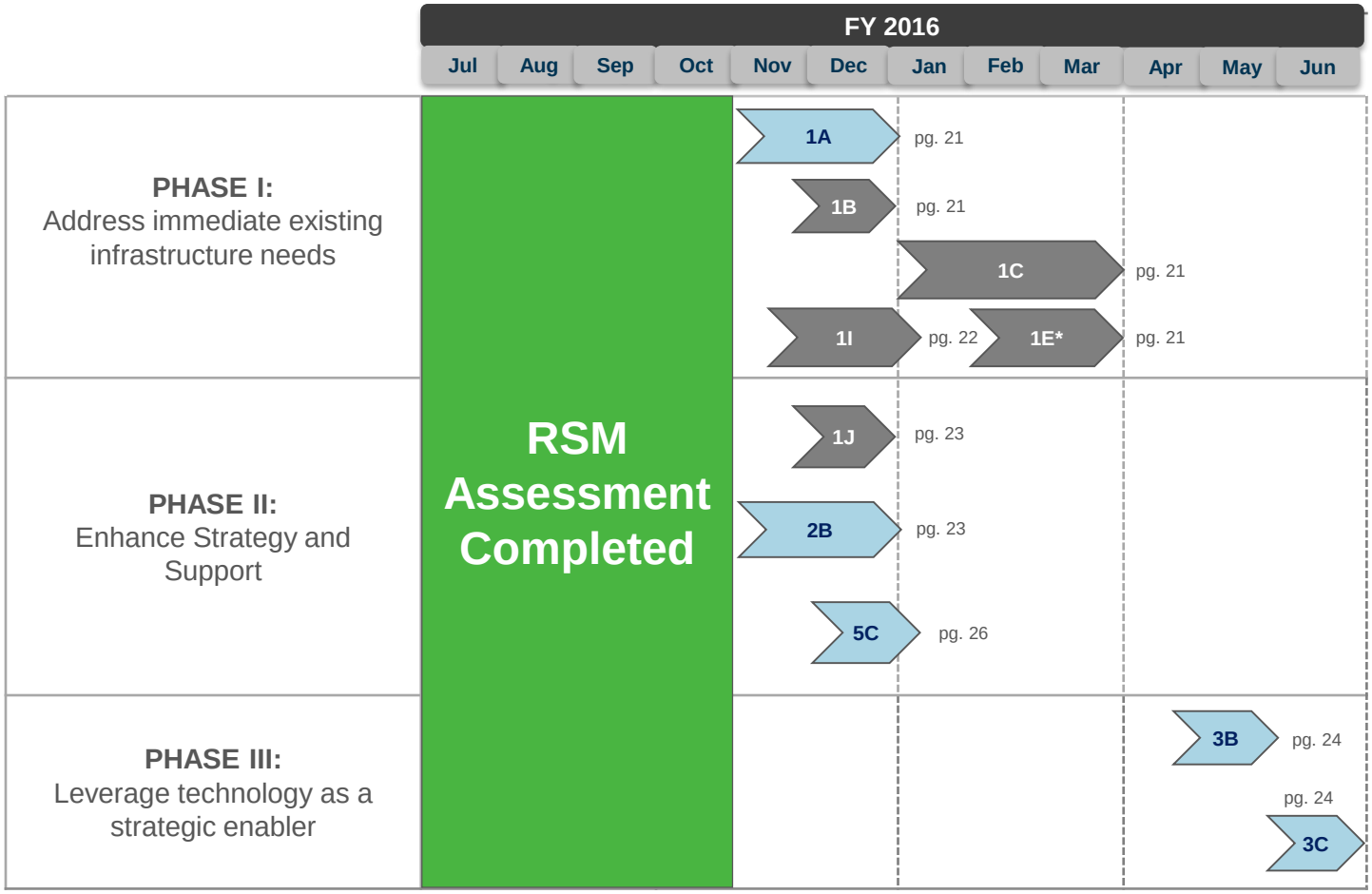
Recommendations and Roadmap

Fiscal Year 2016

Organization | Applications | Infrastructure

No.	Recommendation
1A	Contract Outsourced Managed Services
1B	Conduct Formal Penetration Testing
1C	Replace Existing Firewalls
1E	Assess SAN and Replace Aging Hardware
1I	Replace Legacy Windows OS on Workstations & Servers
1J	Migrate to Hosted Email Platform
2B	Document and Regularly Test Formal IT Policies & Procedures
3B	Assemble IT Review Team & Support Group
3C	Formalize IT Onboarding Process
5C	Create Formalized Process and Regulation of Social Media Publications



Est. Cost
$90K-$110K annually
$25K-$35K
$20K-$40K
~$6.5K** (continued)
$23K-$28K $7-$17/user (monthly)**
$3K-$5K
N/A
N/A
N/A

Cost listings for lines with multiple items reflected in the order they appear on the roadmap
***1I is estimated at $1,000 per desktop and $500 per server; 1J is estimated at $20K-$25K and a one-time $30/user fee for migrating 100 users, with a monthly $7-$17 per license at the government rate*

**1E in FY'16 represents SAN assessment; see FY'17 for replacement*

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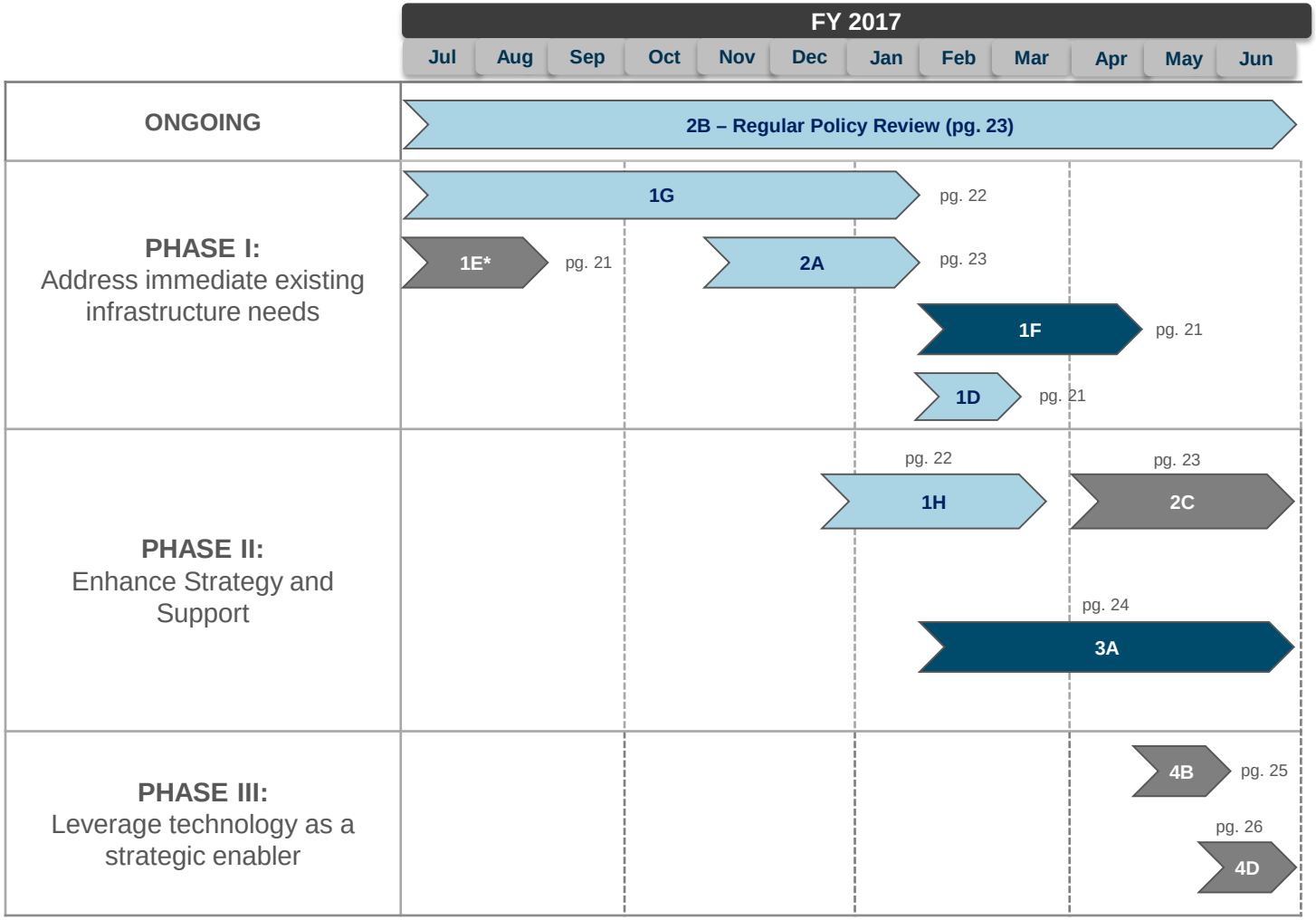
Disclaimer: recommendations for this fiscal year begin in November 2015, as capital items must be approved with the next fiscal year's meeting votes

Recommendations and Roadmap

Fiscal Year 2017

Organization | Applications | Infrastructure

No.	Recommendation
1D	Implement Formal Change Controls
1E	Assess SAN and Replace Aging Hardware
1F	Upgrade Business Systems, Providing Training and Consideration of Additional Support Modules & Hosted Options
1G	Hire Executive IT Director
1H	Implement Patch Management Solution
2A	Hire Full-time Business Systems Administrator
2B	Document and Regularly Test Formal IT Policies & Procedures
2C	Implement Service Management Tool
3A	Implement Document Management Solution
4B	Refresh End-of-Life Network & System Hardware and Document Formal Replacement Cycle
4D	Provide HVAC to High School DMARC Room



Est. Cost
$100K-$125K
$50K-$100K* $68K-$85K
$20K-$25K
N/A
$25K-$40K $7K-$12K
$100K-$200K (continued into Fiscal Year 2019)
$75K-$90K
$8K-$12K

Cost listings for lines with multiple items reflected in the order they appear on the roadmap

**1E in FY'17 represents SAN replacement; see FY'16 for replacement*

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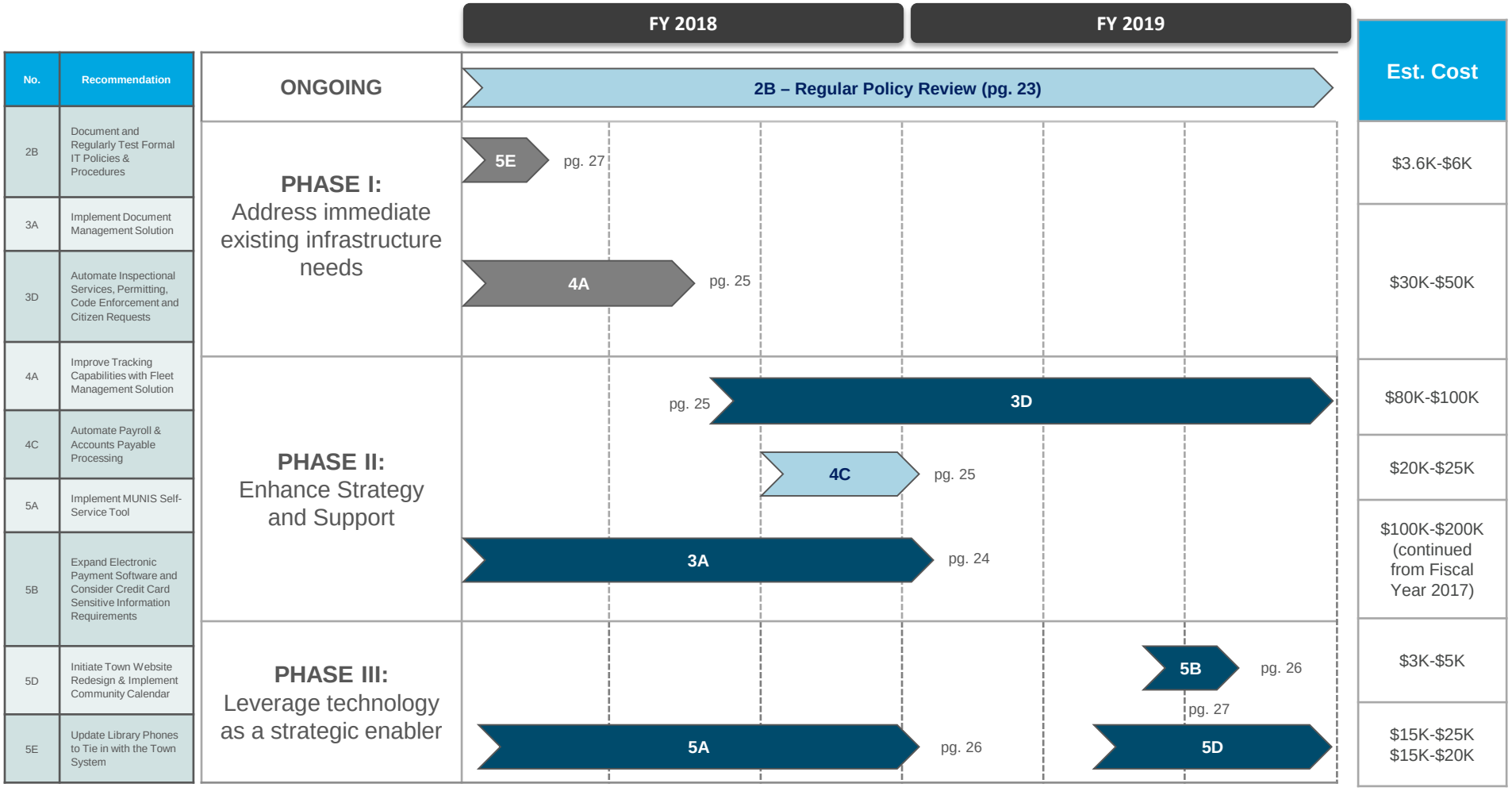
Recommendations and Roadmap

Fiscal Year 2018 through 2019

Organization | Applications | Infrastructure



No.	Recommendation	Est. Cost
2B	Document and Regularly Test Formal IT Policies & Procedures	$3.6K-$6K
3A	Implement Document Management Solution	
3D	Automate Inspectional Services, Permitting, Code Enforcement and Citizen Requests	$30K-$50K
4A	Improve Tracking Capabilities with Fleet Management Solution	
4C	Automate Payroll & Accounts Payable Processing	$80K-$100K
5A	Implement MUNIS Self-Service Tool	$20K-$25K
5B	Expand Electronic Payment Software and Consider Credit Card Sensitive Information Requirements	$100K-$200K (continued from Fiscal Year 2017)
5D	Initiate Town Website Redesign & Implement Community Calendar	$3K-$5K
5E	Update Library Phones to Tie in with the Town System	$15K-$25K $15K-$20K

Cost listings for lines with multiple items reflected in the order they appear on the roadmap

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Recommendations and Roadmap

Key
High Priority
Medium Priority
Low Priority

No.	Recommendation	Priority	Impact	Est. Cost	Resources Internal		External	
1A [1]	Contract Outsourced Managed Services		✓ Managed services will provide redundancy and additional control layers to mitigat risk	$90K - $110K	2 mo.	0.1 FTE	1 mo.	1.0 FTE
1B	Conduct Formal Network Penetration Testing		✓ Documents areas of concern and allow for a formalized action plan ✓ Mitigates current unknown risk and human error ✓ Fosters culture of security awareness	$25K - $35K	1 wk.	0.2 FTE	2-3 wk.	0.4 FTE
1C	Replace Existing Firewalls		✓ New technology will allow for enhanced protections and mitigate identified risk ✓ Next-generation units can allow for improved WAN controls and performance timing	$20K - $40K	2 mo.	0.3 FTE	2 mo.	0.2 FTE
1D [1]	Implement Formal Change Controls		✓ Improves security and business productivity	N/A	1 mo.	0.2 FTE	1 mo.	0.2 FTE
1E	Assess Storage Area Network (SAN) and Replace Aging Hardware		✓ Increases storage ✓ Helps ensure long-term business continuity	$50K - $100K	2 mo.	0.3 FTE	2 mo.	0.3 FTE
1F [1]	Upgrade Business System, Providing Additional Training and Consideration of Additional Modules & Hosted Options		✓ Improves cross-departmental productivity ✓ Increases application utilization ✓ Increases organizational transparency ✓ Improves integrated application environment	$20K - $25K	2 mo.	0.4 FTE	3 mo.	0.4 FTE

(1) Recommended in previous "Five-Year Information Technology Strategic Plan"

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Recommendations and Roadmap

Key
High Priority
Medium Priority
Low Priority

No.	Recommendation	Priority	Impact	Est. Cost	Resources			
					Internal		External	
1G	**Hire Executive IT Director**		✓ Provides strategic direction to IT investments ✓ Matures IT function within the town and provides stable resources to support town hardware, applications, and people ✓ IT Application, Infrastructure and Vision will have dedicated resources	$100K - $125K	6-8 mo.	0.2 FTE	None	None
1H	**Implement Patch Management Solution**		✓ Provides centralized management and greater visibility to deployed patches ✓ Ensures appropriate systems are up-to-date ✓ Minimizes potential security vulnerabilities	$25K - $40K	3-4 mo.	0.2 FTE	1-2 mo.	0.1 FTE
1I	**Replace Legacy Windows OS on Workstations & Servers**		✓ Increases security and performance ✓ Enhances business productivity and user interface ✓ Provides best-of-breed operating system	~$1000 (per desktop) ~$500 (per server)	2-3 mo.	0.3 FTE	1-2 mo.	0.3 FTE

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Recommendations and Roadmap

Key
High Priority
Medium Priority
Low Priority

No.	Recommendation	Priority	Impact	Est. Cost	Resources			
					Internal		External	
1J	**Migrate to Hosted Email Platform**		✓ Provides more secure collaboration & correspondence ✓ Increases space and archiving capabilities ✓ Offers additional services, including messaging & Skype	$23K - $28K* $7-$17 (per user/ month)	4-6 wk.	0.3 FTE	4 wk.	0.3 FTE
2A	**Hire Full-time Business Systems Administrator**		✓ Formalizes controls and delivery of services ✓ Ensures disaster recovery and continuity plans are tested and verified ✓ Defines various technology use and approach	$3K - $5K	4-5 mo.	0.3 FTE	3 wk.	0.2 FTE
2B [1]	**Document and Regularly Test Formal IT Policies & Procedures**		✓ Allows for vetting of IT purchases and identification of alternatives ✓ Helps IT provide more informed support ✓ Formalizes managerial responsibilities for projects ✓ Better aligns IT spend activity with departmental needs, particularly for shared resources	N/A	1-2 mo.	0.1 FTE	None	None
2C	**Implement Service Management Tool**		✓ Manages incidents, inventory, change and release controls ✓ Measures service accountability and performance	$7K - $12K	1-3 mo.	0.2 FTE	2-4 mo.	0.4 FTE

(1) Recommended in previous "Five-Year Information Technology Strategic Plan"

**Accounts for $20K-$25K migration cost and a one-time $30/user migration tool licensing fee for 100 users based on Town of Wayland estimates*

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Recommendations and Roadmap

Key
High Priority
Medium Priority
Low Priority

No.	Recommendation	Priority	Impact	Est. Cost	Resources			
					Internal		External	
3A [1]	**Implement Document Management Solution***		✓ Ensures compliance with State regulations ✓ Improves disaster recovery capabilities ✓ Automates temporary records & documents ✓ Provides community access to public records	$100K - $200K	18-24 mo.	0.5 FTE	6-8 mo.	0.4 FTE
3B	**Assemble IT Review Team & Support Group**		✓ Allows for vetting of IT purchases and identification of alternatives ✓ Helps IT provide more informed support ✓ Formalizes managerial responsibilities for projects ✓ Better aligns IT spend activity with departmental needs, particularly for shared resources	N/A	1-2 mo.	0.1 FTE	None	None
3C [1]	**Formalize Employee IT Onboarding Process**		✓ Ensures new employees have appropriate permissions and logins prior to start date ✓ Mitigates risk, allows for smooth transitions and early problem resolution ✓ Improves work culture and environment ✓ Prevents unwanted access following leaves and off-boarding	N/A	2-3 wk.	0.2 FTE	None	None

(1) Recommended in previous "Five-Year Information Technology Strategic Plan"
**The Est. Cost for 3A does not include the cost for digitizing paper assets*

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Recommendations and Roadmap

Key
High Priority
Medium Priority
Low Priority

No.	Recommendation	Priority	Impact	Est. Cost	Resources Internal		External	
3D [1]	**Automate Inspectional Services, Permitting, Code Enforcement and Citizen Requests**		✓ Creates more effective, real-time reporting with necessary granularity ✓ Integrates more effectively with other business systems, including MUNIS ✓ Increases public transparency through extranet capabilities ✓ Enables option to automate social media updates regarding permits and public safety ✓ Enable GIS systems to reflect accurate real-time owner information	$80K - $100K	12-16 mo.	0.4 FTE	1-2 mo.	0.5 FTE
4A	**Improve Tracking Capabilities with Fleet Management Solution (GPS)**		✓ Allows Police, Fire and DPW departments to accurately track their resources ✓ Improves productivity, project management, and service delivery	$30K - $50K	6 mo.	0.3 FTE	2 wk.	0.4 FTE
4B	**Refresh End-of-Life Network & System Hardware and Document Formal Replacement Cycle**		✓ Creates stable and supported network ✓ Provides a reliable town and school wide network infrastructure ✓ Mitigates risk of unsupported core equipment	$75K - $90K	1 mo.	0.1 FTE	1-2 days	0.3 FTE
4C [1]	**Automate Payroll and Accounts Payable Processing**		✓ Reduces manual steps and mitigates risk of error ✓ Increases reliability of data and timeliness of payments ✓ More fully leveraging capabilities of MUNIS	$20K - $25K	4-6 mo.	0.5 FTE	2 mo.	0.4 FTE

(1) Recommended in previous "Five-Year Information Technology Strategic Plan"

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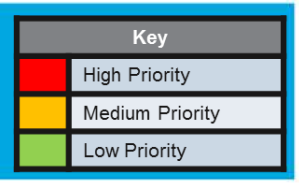
RSM

Recommendations and Roadmap



No.	Recommendation	Priority	Impact	Est. Cost	Resources Internal		External	
4D	**Provide HVAC to High School Datacenter (DMARC) Room**		✓ Increases physical security and longevity of High School devices	$8K - $12K	1 mo.	0.1 FTE	1 mo.	1.0 FTE
5A [1]	**Implement MUNIS Employee Self-Service Tool**		✓ Provides efficient, reliable 24/7 access and support for Town and School Employees ✓ Allows automation and formalization of key functionality, such as paid time off and changes in benefits ✓ Mitigates risk and reduces manual inputs and storage from Finance & Human Resources	$15K - $25K	3-6 mo.	0.3 FTE	1 mo.	0.5 FTE
5B	**Expand Electronic Payment Software and Consider Credit Card Sensitive Information Requirements**		✓ Reduces small checks and on-premises storage of physical cash ✓ Ensures insight into credit card sensitive information needs ✓ Allows for potential transition to online payment portal should the Town consider this option ✓ Expands payment options for residents and service providers	$3K - $5K	1-2 mo.	0.2 FTE	1-2 wk.	0.1 FTE
5C	**Create Formalized Process and Regulation of Social Media Publications**		✓ Ensures compliance with Massachusetts record retention regulations ✓ Creates unified and consistent communications across departments	N/A	2-3 wk.	0.2 FTE	1-2 wk.	0.1 FTE

(1) Recommended in previous "Five-Year Information Technology Strategic Plan"

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Recommendations and Roadmap

Key
High Priority
Medium Priority
Low Priority

No.	Recommendation	Priority	Impact	Est. Cost	Resources			
					Internal		External	
5D [1]	**Initiate Town Website Redesign & Implement Community Calendar**		✓ Vets common information and reduces unnecessary redundancy and confusion ✓ Enables some level of automated reporting directly to key business systems ✓ Initiates possibility for online payment and additional forms ✓ Allows for consideration of extranet options	$15K - $20K	6-8 mo.	0.4 FTE	1-3 mo.	0.3 FTE
5E	**Upgrade Library Phones to Tie in with the Town System**		✓ Provides better connectivity across Town departments on a unified system	$3.6K - $6K	1-2 wk.	0.2 FTE	1-2 days	0.3 FTE

(1) Recommended in previous "Five-Year Information Technology Strategic Plan"

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Recommendations and Roadmap

Capital Request Recommendations FY'16 – FY'19

Fiscal Year 2016

No.	Description	Est. Cost
1B	Network Penetration Testing	$25K-$35K
1C	Firewalls with Layer 7 Capabilities	$20K-$40K
1I	Replacement Servers and Workstations *4 Windows XP Machines & 5 Windows 2003 Servers** *at ~$1,000 per desktop and ~$500 per server*	$6.5K
1J	Migrate to Hosted Email Platform	$23K-$28K

Estimated Total: $74.5K-$109.5K

**Figures based on July 10, 2015 "Town of Wayland IT System and Security Status Update" documentation*

***Includes migration fee of $20K-$25K and one-time migration tool licensing at $30/user; costing based on 100 users per Town estimates*

Fiscal Year 2017

No.	Description	Est. Cost
1E	Replacement SANs	$50K-$100K
1F	Business Systems Upgrade & Training	$20K-$25K
1H	Patch Management Solution	$25K-$40K
2C	Service Management Tool	$7K-12K
3A	Document Management Solution	$100K-$200K
4B	Network & System Hardware Refresh	$75K-$90K
4D	HVAC System for High School Datacenter	$8K-$12K

Estimated Total: $285K-$479K

Fiscal Year 2018

No.	Description	Est. Cost
3D	Automation Software for Public Services	$80K-$100K
4A	Fleet Management Solution	$30K-$50K
4C	Automation for Payroll & Accounts Payable	$20K-$25K
5A	MUNIS Self-Service Tool	$15K-$25K
5E	Upgraded Library Phones System	$3.6K-$6K

Estimated Total: $148.6K-$206K

Fiscal Year 2019

No.	Description	Est. Cost
5B	Electronic Payment Software	$3K-$5K
5D	Initiate Town Website Redesign & Implement Community Calendar	$15K-$20K

Estimated Total: $18K-$25K

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APPENDIX I:
IT ORGANIZATION

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IT Organization
Overview

Key
Low Maturity
Medium Maturity
High Maturity

RSM conducted a holistic review of Town's IT Organization. To provide a comprehensive evaluation, areas of analysis included organizational structure, functional staff capabilities, spending and management of resources.

Although the team has been able to maintain a lean operation, there is an opportunity for investments to be made in several different areas.

IT Organization Score Card

Category	Status
IT Organization	
Functional Capabilities	
Spending	
Service Management	

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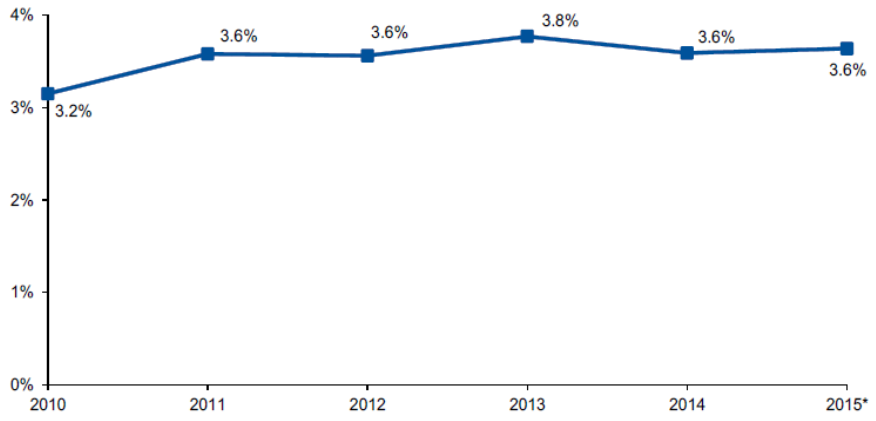
IT Organization
IT Spending Industry Benchmark

The average IT spend for the State and Local Government Industry with revenues less than $250M is 5.6%

Figure 3. Government — State and Local: IT Spending as a Percent of Operational Expense



*Note: The value for 2015 is a projected figure, and is based upon projected 2015 IT budgets provided by Gartner clients.

Source: Gartner IT Key Metrics Data (December 2014)

* Figure 3 is an aggregate weighted average representation of IT Spending irrespective of revenue size

Table 3. IT Spending as a Percent of Operating Expense, by Industry for Midsize Enterprises, 2014

	Revenue Scale		
Industry	**Less Than $250 Million**	**$250 Million to $500 Million**	**$500 Million to $1 Billion**
All Industries (Cross-Industry)	6.0%	5.4%	4.3%
Banking and Financial Services	9.1%	9.6%	8.0%
Chemicals	1.3%	1.9%	1.5%
Construction, Materials and Natural Resources	1.3%	2.0%	1.4%
Consumer Products	1.9%	N/A	1.8%
Education	5.6%	6.1%	4.7%
Energy	N/A	N/A	2.7%
Food and Beverage Processing	1.5%	1.2%	1.1%
Government — National and International	11.7%	12.9%	7.1%
Government — State and Local	5.6%	3.6%	2.6%
Healthcare Providers	3.4%	4.2%	4.6%
Industrial Electronic and Electrical Equipment	2.8%	2.1%	2.2%
Industrial Manufacturing	2.1%	2.0%	1.7%
Insurance	3.9%	3.7%	4.2%
Media and Entertainment	5.9%	N/A	N/A
Pharmaceuticals, Life Sciences and Medical Products	4.1%	5.2%	N/A
Professional Services	6.2%	4.5%	4.7%
Retail and Wholesale	2.5%	2.2%	2.0%
Software Publishing and Internet Services	7.6%	6.6%	N/A
Telecommunications	4.9%	N/A	N/A
Transportation	4.4%	3.3%	3.5%

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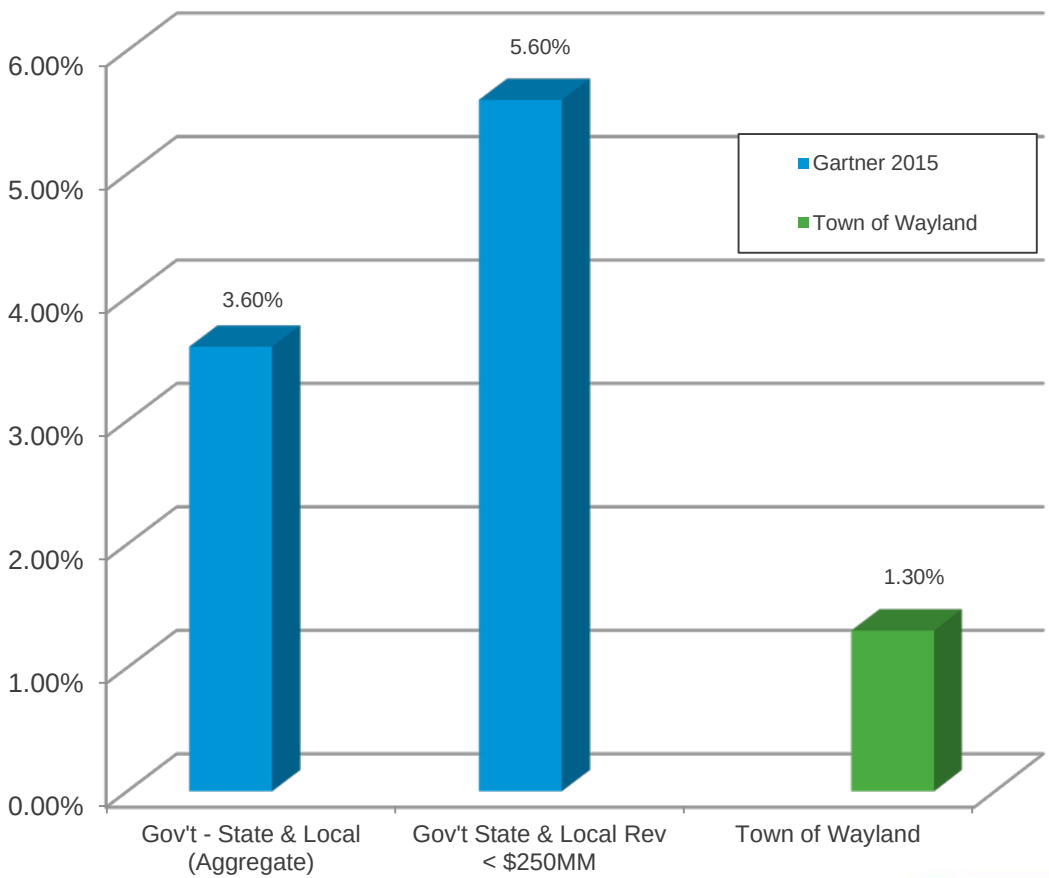
IT Organization
IT Spend Benchmarks

Wayland spends approximately 1.3% of Operating Budget on IT, based on data provided.

According to benchmarking data, Wayland's IT spend (1.3%), as a percent of Operating Budget, **is less than the 3.6% national State & Local Government average, and the 5.6% average among governments of similar size.**

IT Spend as a Percentage of Revenue (or Operating Budget)



Hall, Linda; Futela, Shreya; & Gupta, Disha (2014, December 15). IT Key Metrics Data 2015: Key Industry Measures: Government State and Local Analysis: Multiyear *(ID: G00266024). Retrieved from Gartner database.*

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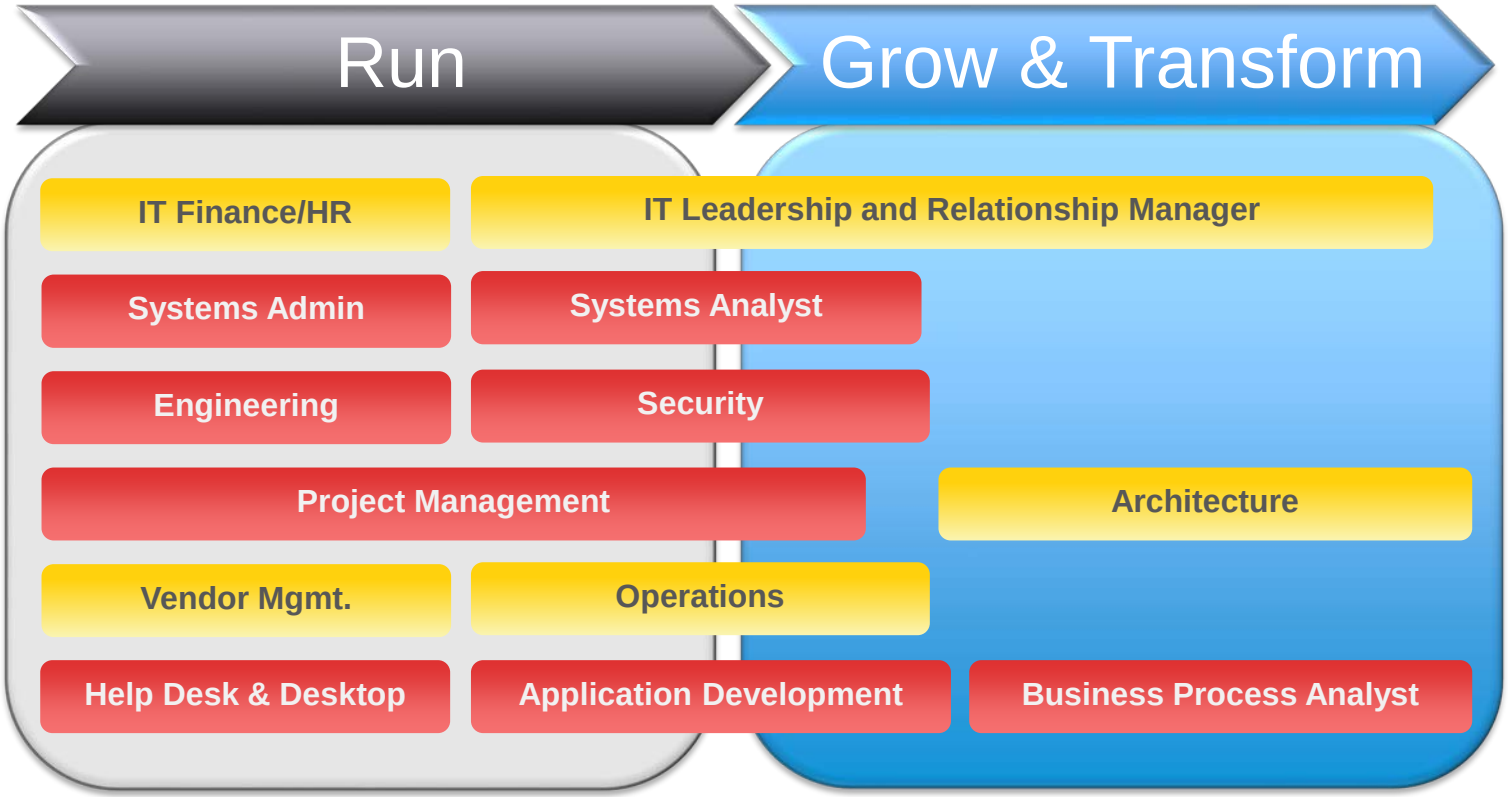
IT Organization

Functional Capability Gap Analysis

Key
Low Maturity
Medium Maturity
High Maturity

RSM evaluated the current state maturity of each function:



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IT Organization
Functional Observations

Function	Observations

IT Budgeting	• Although a managed budget exists, IT spend is significantly less than industry standard
	• Spend should increase in several areas including but not limited to:
	  • Internal Resources (Executive IT Leadership – Shared Town and School Business Application Management)
	  • External Resources (Managed Service Provider)
	  • Software Upgrades
	  • Operating System Upgrades
	  • Storage, Security and Hardware life cycle replacements

IT Resources	• Currently IT resources are shared between the Town and the School, spreading several employees thin, resulting in a lack of support for many of the Town employees • The organization would benefit from key additions to headcount
IT Leadership & Relationship Manager	• There is significant emphasis throughout the community on investing in academic technology as a strategic initiative, yet the IT function within the Town is not seen as a strategic business partner • The Town's IT function has been operating on a minimum budget, maximum convenience philosophy which has prevented the Town from keeping up to date with industry leading practices • There is currently no formal IT strategy in place for the Town; albeit there is a 5-year "strategic plan," which has provided guidance as to some of the capital investments needed; there is no plan or leadership position to drive initiative aligned to the plan within the town
Network & Systems Admin	• The Organization does not have enough internal resources to proactively monitor entire network which has exposed the Town to potential increased security risks
Business Analyst	• There is not currently a position that manages the Town's key business system, MUNIS • Functional owners have been arbitrarily defined within the user community without any formal training, instruction or certification

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IT Organization
Functional Observations

Function	Observations
Project Management	• There is no formal body or process to determine IT investments or manage IT projects
Security	• IT has strong consideration for preventative hardware but has not sufficiently prioritized management of its firewall, logins, applications of patches or policies • There are no formal, current Information Security Policy, Information Technology Policy or Information Technology Procedures
Architecture	• The Town uses several disparate systems with limited integration, leading to several manual processes, duplicative data entry and a large paper trail
Vendor Management	• IT outsources key services and manages relationships effectively; however, these decisions are often made in reaction to need rather than in anticipation of it
Operations	• The organization lacks clearly defined IT processes and ownership in the areas of project management, patch management, backup, change management and on-boarding/off-boarding in the field
Help Desk & Desktop	• The current ticketing system is not the primary means for raising technology issues for end users • The IT Temperature Check survey responses indicated a poor experience with IT Help Desk support • A lack of standards and processes around desktop patching, automation and asset management has lead to inefficient troubleshooting
Application Development	• There is no dedicated resource or plan in place for application development, improvement or support within the Town • Many departments are using applications (ex. Health, COA) that do not meet their business requirements • Applications are significantly under utilized given the lack of training, support, and ownership provided

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IT Organization
Functional Observations

Function	Observations
Engineering	• The Town relies on School-side vendor relationships to provide an outsourced IT engineering skillset on an ad-hoc basis • These vendors do not maintain an Infrastructure strategy for the Town

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IT Organization

Town of Wayland Meeting Representatives

As part of the discovery phase of this assessment, RSM met with the following key business process owners in order to better understand the current state of the Town of Wayland.

Department	Participants	Role
Assessors	Ellen Brideau	*Director of Assessing*
Building Inspection	Jay Abelli	*Building Commissioner*
	Norma Badger	*Department Assistant*
Clerk	Beth Klein	*Town Clerk*
Conservation	Brian Monahan	*Conservation Administrator*
Council on Aging	Julie Secord	*Director*
	Nancy Greenwood	*Administrative Assistant*
DPW & Water	Dan Cabral	*Admin. Coordinator*
	Joe Doucette	*DPW*
Facilities	Kenneth “Ben” Keefe	*Public Buildings Director*
Finance	Brian Keveny	*Finance Director*
	Anna Terrell	*Accountant*
	Gayle Stahl	*Accounts Payable*
	Rita Ben-Cherqui	*Payroll*
	Donna Lemoyne	*Benefits*
Fire & EMS	David Houghton	*Fire Chief*
Health	Julia Junghanns	*Director of Public Health*
	Ruth Mori	*Public Health/School Nurse*
	Diane Ledwell	*Senior Clerk*
	Patti White	*Department Assistant*

Department	Participants	Role
Human Resources	John Senchyshyn	*HR Director*
Information Technology	Leisha Simon	*IT Director (Shared town/schools)*
	Gwendolyn Sams-Lynch	*Hardware/Software Manager*
	Albie Cincotti	Network Administrator
	Augusto Saviatto	*AD/VM Systems Administrator*
Library	Ann Knight	*Library Director*
	Sandra Raymond	*Assistant Director*
Parks & Recreation	Jessica Brodie	*Recreation Director*
Planning	Sarkis Sarkisian	*Town Planner*
Police	Robert Irving	*Police Chief*
	Mark Wilkins	*Community Services Officer*
Procurement	Elizabeth Doucette	*Financial Research/Analyst*
Schools	Dr. Paul Stein	*Superintendent of Schools*
	Susan Bottan	*School Business Administrator*
Town Administrator	Nan Balmer	*Town Administrator*
Town Surveyor & GIS	Alf Berry	*Town Surveyor*
Treasurer/Collector	Zoe Pierce	*Treasurer/Collector*
	Cindy Cincotta	*Assistant Treasurer*
	Judy Porter	*Department Assistant*
Youth & Family Services	Lynn Dowd	*Director*

IT Organization

Cross-departmental IT Issues & Concerns

Across the Town of Wayland, RSM identified a number of common IT Issues and Concerns expressed by key departmental stakeholders. They are as follows:

- A lack, if not absence, of business systems training and ineffective IT onboarding
- Ineffective use and leveraging of the Town's primary business application, MUNIS
- A lack of data bridges between key business applications
- Multiple shadow spreadsheets and redundant work due to limited systems integration and/or sub-optimal systems use
- General issues with software requests, fit, and vetting processes
- Few Town-side IT resources and inadequate Help Desk tools
- Difficulties generating useful reports and gaining visibility into key data
- The lack of change controls and rigid user permissions have created productivity issues
- Limited collaboration tools for shared scheduling, services and business tasks

Additionally, department stakeholders identified common areas for necessary improvements in Town-side technology to drive business productivity and enhance service delivery to Town of Wayland constituents:

- Automation of permitting, inspectional & code enforcement tasks and fulfillment of citizen requests
- Improved fleet tracking & field service
- Document virtualization and approval automation
- Expansion and formalization of electronic payment capabilities
- Automation of remaining manual Payroll and Accounts Payable forms

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IT Organization
Observations and Recommendations

Legend	
$	<$10.000
$$	$10,000-$100,000
$$$	>$100,000

Evaluation Area	Description	Recommendation	Est. Cost	Impact	Priority
Network Management	• The Town does not currently have the resources to proactively monitor the network	✓ Outsource managed service provider	$$$	High	**High**
Change and Patch Management	• The Town does not maintain formal change controls for systems and devices • The Town lacks formal standards regarding the process for desktop patching • The Town has no formal solution for patch management	✓ Implement formal change controls ✓ Implement patch management solution	$$	High	**High**
IT Organization	• The Town currently pulls from School resources to support IT needs • Many IT decisions made by either Town or School will affect the other's business • Many IT purchases are made ad-hoc by department and/or in reaction to immediate need	✓ Hire Town-side IT Director to lead Town-side IT business and serve as lead for cross-departmental decisions ✓ Assemble IT Review Team & Support Group to vet IT purchases and drive long-term plan at both Town and Departmental levels	**$$$**	**High**	**High**
Business Systems Administration	• There is no dedicated resource to manage IT solutions, ensure alignment with business needs, provide end user support and foster innovation	✓ Hire a full-time Business Systems Administrator	**$$**	**High**	**Medium**
IT Policies & Procedures	• No formal information security plan or documented IT Policies and Procedures exist for the Town	✓ Implement formal IT Policies and Procedures that are tested and updated annually	**$**	**High**	**Medium**

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IT Organization
Observations and Recommendations

Legend	
$	<$10.000
$$	$10,000-$100,000
$$$	>$100,000

Evaluation Area	Description	Recommendation	Est. Cost	Impact	Priority
IT Onboarding	• Departments have identified issues with onboarding relevant employees and ensuring appropriate permissions and IT capabilities for key responsibilities	✓ Formalize IT onboarding process, with necessary access and permissions prior to start date	**N/A**	**High**	**Medium**
Payroll and Accounts Payable	• No formal information security plan or documented IT Policies and Procedures exist for the Town	✓ Eliminate paper forms and automate payroll and accounts payable processing	**$$**	**High**	**Low**
Social Media	• The Town does not currently have a policy that standardizes the creation and retention of Social Media	✓ Create policies for social media usage and data retention	N/A	Medium	Low

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APPENDIX II: BUSINESS APPLICATIONS & DATA MANAGEMENT

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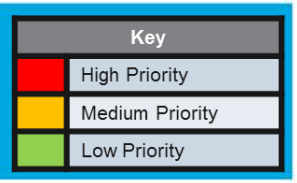
Business Applications & Data Management

Application Environment Overview



Applications	Key Observations	Integrity	Fit	Viability
MUNIS	• The Town runs an unsupported version of MUNIS and is not using/does not have key business modules to streamline business • The Town is not fully aware of the Tyler support and community available to municipal clients • MUNIS does not integrate with other key business applications, and the lack of data bridges has created multiple manual key-ins, excess paper and duplicate work			
IT Help Desk	• The current solution does not support Town needs • Issue resolution is often ad-hoc only 5% of Town end-users leverage the system • Minimal formal use and policy has led to a lack of reporting metrics			
CAI/GIS	• CAI Hosts GIS • This solution does not provide regular-enough updates to property maps • Works in a layered format with Pictometry with no integration between tools			
Pictometry	• Not integrated with CAI tool, leading to dependence on shared drives and cluttered data • Pictometry and CAI currently function in a layered format without integration, rather than a siloed model			

Category	Description
Integrity	Risk of data corruption, loss and / or security vulnerabilities
Fit	Ability of resource(s) to fulfill current and near-term business needs
Viability	Ability of resource(s) to scale or expand to accommodate future plans

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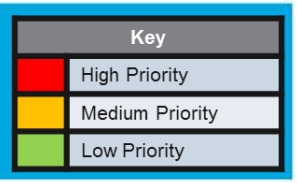
Business Applications & Data Management

Application Environment Overview



Applications	Key Observations	Integrit	Fit	Viability
VADAR	• Best-of-breed tool, handling Treasury processes • The lack of integration with MUNIS has forced Town employees to duplicate data entries and use Excel and Quickbooks unnecessarily			
Crystal Reporting	• Not a well known capability among town staff • Limited native MUNIS reporting and not well-leveraged across departments • Non-out-of-box reporting from MUNIS is done in Crystal Reports			
Website	• Generally difficult to maintain extranet functionality for site visitors • Site architecture does not efficiently distribute forms or mimic business processes • Lacks sufficient intranet and employee self-service capabilities, creating excess work for the Town • Lacks online payment capabilities			
Outlook	• Being used as place of primary storage • No active directory integration with the Gmail accounts leveraged by School personnel, preventing ease-of-use for end-users • No Address book—individuals are owners of address book that changes regularly			
MySeniorCenter	• The COA is still transitioning to this software			

Category	Description
Integrity	Risk of data corruption, loss and / or security vulnerabilities
Fit	Ability of resource(s) to fulfill current and near-term business needs
Viability	Ability of resource(s) to scale or expand to accommodate future plans

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Business Applications & Data Management
Observations and Recommendations

Legend	
$	<$10.000
$$	$10,000-$100,000
$$$	>$100,000

Evaluation Area	Description	Recommendation	Est. Cost	Impact	Priority
Business Systems & Training	• The Town currently runs an unsupported version of MUNIS (v9.3) • Town departments would benefit from key modules that could assist in document management and limited data bridges • Limited formal training has lead to a lack of perceived value in the application • Limited formal training has lead to a lack of perceived value in the application	✓ Upgrade to a supported version of MUNIS ✓ Consider Tyler-hosted environment to mitigate potential risk ✓ Consider additional modules for document management and Treasury ✓ Provide end-to-end user training in all facets of MUNIS for the modules currently in use at Wayland ✓ Publicize existing training environment ✓ Consider engaging Tyler user community for additional support and innovation ✓ Migrate to Microsoft Reporting Services for MUNIS reporting; look into SSRS capabilities ✓ Leverage open reports posted to the Tyler Community Portal	$$	High	High
Document Management	• The Town uses a large amount of papers for key business tasks, leading to inefficiencies and the assumption of unnecessary risk • The Town has many ad-hoc, department-specific processes for paper asset storage • Some files are not replicated outside of their physical environment	✓ Create formalized process for document management & implement document management solution	$$$	High	Medium

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Business Applications & Data Management
Observations and Recommendations

Legend	
$	<$10.000
$$	$10,000-$100,000
$$$	>$100,000

Evaluation Area	Description	Recommendation	Est. Cost	Impact	Priority
Services & Requests	• MUNIS lacks the necessary data bridge with GIS • Information is not real-time and Town users have limited visibility • Wayland's Health Department uses a Building module for permits • There is a high reliance on physical forms and Google docs	✓ Automate Inspectional Services, Permitting, Code Enforcement and Citizen Requests	$$	High	Medium
Self-Service	• Employees at the Town of Wayland have limited self-service capabilities • Many key processes for related service are highly manual and maintained in Excel	✓ Implement self-service tool on intranet ✓ Consider automation of HR functionality, such as new benefits, paid time off and attendance	$$	Medium	Medium
Electronic Payment	• The Town accepts a large amount of physical cash and checks on-site, slowing key processes and introducing potential risk • There is not a standardized policy for departments to accept electronic funds	✓ Leverage existing electronic payment software ✓ Consider credit card sensitive information requirements for compliance purposes	$	High	Low
Town Website & Scheduling	• The website is not consistently user-friendly and site architecture creates some end-user issues • There are automation capabilities for the website that would make key processes more efficient and accurate • Facilities and related services are shared across Town and School • The Town and School do not have a single repository for scheduled events	✓ Initiate Town website redesign ✓ Create and manage an official community calendar	$$	Medium	Low

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APPENDIX III: INFRASTRUCTURE

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Infrastructure
Overview

Key
Low Maturity
Medium Maturity
High Maturity

RSM reviewed the IT Infrastructure in place in Wayland. This included a review of the datacenter, networking, workstation, telephony and other core systems.

Assessment was limited to documentation provided, IT staff interviews, and physical observations.

Onsite visit completed at Wayland's town offices, High School datacenter and offsite departmental facilities.

IT Infrastructure Score Card

Category	Status
Active Directory	
Backup and Disaster Recovery	
Collaboration	
Mobile Devices	
Network – WAN	
Network LAN / Wireless	
Physical Environment	
Power / UPS	
Security	
Server Infrastructure	
Storage	
System Monitoring / Helpdesk / System Inventory	
Telephony	
Workstations	

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Infrastructure
Observations and Recommendations

Legend	
$	<$10.000
$$	$10,000-$100,000
$$$	>$100,000

Evaluation Area	Description	Recommendation	Est. Cost	Impact	Priority
Active Directory	• Administrator account is in use • Password policy set at 60 day expiration, complexity required • Many permissions are added at user level, not via AD Groups • Domain Controllers run on unsupported operating systems	✓ Cease use of shared domain admin accounts, including Administrator ✓ Adopt Active Directory best practices ✓ Replace Domain Controllers with modern operating system	N/A	Low	High
Backup and Disaster Recovery	• No formal information security plan or documented IT Policies and Procedures exist for the Town • Backup tapes are stored in on-site safe, not offsite • Deficiencies have been identified relating to singular employee absences, highlighting the lack of a larger business continuity or Disaster Recovery plan • The IT Organization lacks formalized recovery point objectives for all business applications and infrastructure	✓ Complete Business Impact Analysis (BIA). Generate recovery point and time objectives (RPO/RTO) ✓ Create disaster recovery/business continuity plan and runbook; test on regular basis ✓ Ensure offsite backup approach is sound; test recovery on regular basis	$	High	High
Collaboration	• Town Exchange 2010 Server running on an unsupported OS; there is no mailbox quota in place • Barracuda email appliance filters mail for spam, viruses, etc. received by Town users • No formal retention policy	✓ Migrate Town e-mail to hosted e-mail provider. Retire Exchange server and Barracuda appliance ✓ Define and enforce retention policies	$$	Medium	High

Some infrastructure recommendations are part of overall projects, one-off solutions, or refer to the adoption of IT best practices and are not reflected in the overall roadmap.

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Infrastructure
Observations and Recommendations

Legend	
$	<$10.000
$$	$10,000-$100,000
$$$	>$100,000

Evaluation Area	Description	Recommendation	Est. Cost	Impact	Priority
Network – LAN Wireless	• 3x Verizon FiOS connections provide Internet service to all Town and School buildings: 2 in High School, 1 in Town Hall • No redundant Internet Provider • Juniper firewalls approaching capacity; Not capable of Layer 7 packet inspection to prevent proxy workarounds to content filtering by students	✓ Provision secondary ISP to provide redundancy to Verizon FiOS for both Town (primary) and Schools ✓ Replace Juniper firewalls with models supporting Layer 7	$$	High	High
Security	• The Town has not conducted any formal penetration testing • Multiple legacy platforms are no longer supported by vendors	✓ Conduct formal network penetration testing ✓ Replace all legacy Operating Systems	$$	High	High
Server Infrastructure	• The Town assumes potential compliance and business continuity risk with on-premises systems without the staff to support them • 5 Town Server Operating Systems are Windows Server 2003; this OS is no longer supported by Microsoft and presents a potential active security risk, along with application incompatibilities • One legacy physical server (BLD07) is no longer in warranty (expired 2010) • VMWare View utilized, however linked clones are not in use	✓ Identify hosted migration options for business applications (included in MUNIS upgrade recommendation) ✓ Upgrade all Town servers to supported Operating Systems ✓ Evaluate options to replace legacy physical server ✓ Begin use of linked clones to bring environment consistency and reduce VM storage requirements	$$	High	High

Some infrastructure recommendations are part of overall projects, one-off solutions, or refer to the adoption of IT best practices and are not reflected in the overall roadmap.

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Infrastructure
Observations and Recommendations

Legend	
$	<$10.000
$$	$10,000-$100,000
$$$	>$100,000

Evaluation Area	Description	Recommendation	Est. Cost	Impact	Priority
Storage	• Both of the School's Dell Equilogic SANs are reaching end of life • The School SAN is reaching capacity and Town resources are being leveraged for data replication • There has been little strategic investment in the current SAN, leading to inefficient resource sharing and storage issues • The lack of capacity presents long-term business continuity concerns	✓ Replace SANs reaching end of life ✓ Implement remote site for cold storage and imaged-based replication ✓ Continue migration to vSphere replication and away from SAN replication	$$	High	High
System Monitoring / Help Desk and System Inventory	• The Town does not have a management tool for help desk ticketing, system inventory, system monitoring and business request tracking • Current tools are not effectively supporting business needs—users avoid engaging IT for support • The Town uses School-side people and tool resources to service departments • Issue resolution and true IT support needs lacks visibility	✓ Implement an ITIL-focused service management tool to support help desk ticketing, system inventory, system monitoring and business request tracking	$	High	High
Workstations	• The Town runs Windows XP (4 workstations found), for which Microsoft no longer provides security updates • Most users leverage thin client workstations with VDI	✓ Eliminate remaining Windows XP clients, and eliminate or migrate away from current servers	$	Medium	High

Some infrastructure recommendations are part of overall projects, one-off solutions, or refer to the adoption of IT best practices and are not reflected in the overall roadmap.

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Infrastructure
Observations and Recommendations

Legend	
$	<$10.000
$$	$10,000-$100,000
$$$	>$100,000

Evaluation Area	Description	Recommendation	Est. Cost	Impact	Priority
Mobile Devices	• Town employees have separate mobile devices for business needs; BYOD not permitted • No mobile device policy in place	✓ Evaluate BYOD needs and approach ✓ Define Mobile Device Policy ✓ Enforce policy via Mobile Device Management solution	$	High	Medium
Network - WAN	• 3x Verizon FiOS connections provide Internet service to all Town and School buildings—2 in High School, 1 in Town Hall • No redundant Internet Provider • Juniper firewalls approaching capacity; Not capable of Layer 7 packet inspection to prevent proxy workarounds to content filtering by students	✓ Provision secondary ISP to provide redundancy to Verizon FiOS for both Town (primary) and Schools ✓ Replace Juniper firewalls with models supporting Layer 7	$$	High	Medium
Power/UPS	• Dual UPS devices provide protection to High School datacenter • Generator will activate if needed	✓ Continue monitoring UPS utilization	N/A	N/A	Medium
Physical Environment	• Most Town servers hosted in High School datacenter • High School datacenter (DMARC) room houses secondary UPS, not air conditioned	✓ Provide HVAC to High School DMARC room	$	Low	Low
Telephony	• Avaya phone system in use at most locations • Voice and data cabling plants are not converged • The Library's phone currently operates separately from the Town's system	✓ Continue evaluating phone system platforms for optimal fit ✓ Converge voice and data networks to reduce complexity, hardware requirements and cabling expense ✓ Upgrade library phones to tie in with the Town system	$	Low	Low

Some infrastructure recommendations are part of overall projects, one-off solutions, or refer to the adoption of IT best practices and are not reflected in the overall roadmap.

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Infrastructure

Proposed Replacement Cycle – Juniper & Aruba

Manufacturer	Model	Device Type	End of Support
Juniper	EX2200 Series	Network Switch	11/30/2017
Juniper	EX3200 Series	Network Switch	08/31/2019
Juniper	EX4200 Series	Network Switch	06/30/2018
Juniper	EX4500 Series	Network Switch	12/31/2018
Juniper	SA2500	VPN	12/31/2018
Juniper	SRX240H	Gateway	5/10/2019
Juniper	SSG-140-SH	Gateway	1/31/2021
Aruba	AP-135	Access Point	08/01/2020
Aruba	AP-175	Access Point	07/31/2020
Aruba	AP-65	Access Point	5/31/2019
Meraki	MR-16	Access Point	5/31/2021
Pulse Secure*	MAG-2600	VPN	8/31/2015

Dates for Juniper's end-of-support reflect the moment at which the company will completely discontinue support for the product
**As of August 1, 2015, all of Juniper's Junos Pulse Products are sold and supported by Pulse Secure; this contract has expired*

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Infrastructure

Proposed Replacement Cycle – Dell Server Blades

Model	Device Type	Warranty Start	Warranty End
Equallogic PS6000x	Server Blade	07/30/2009	09/19/2015
Equallogic PS6000xvs	Server Blade	08/10/2011	08/08/2015
EqualLogic PS6100E	Server Blade	05/03/2012	05/01/2016
PowerEdge M710	Server Blade	07/31/2009	07/29/2015
PowerEdge M710	Server Blade	07/31/2009	07/29/2015
PowerEdge M710	Server Blade	07/31/2009	07/29/2015
PowerEdge M710	Server Blade	07/31/2009	07/29/2015
PowerEdge M710	Server Blade	03/16/2011	07/29/2015
PowerEdge M710	Server Blade	07/05/2011	07/29/2015
PowerEdge M710	Server Blade	07/05/2011	07/29/2015
PowerEdge M710	Server Blade	07/03/2012	07/02/2015

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APPENDIX IV: RISK & CONTROLS

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Risk and Controls

Risk & Controls – Functional Policy Areas

Functional Area	Policy Examples
System Access	• Sharing and unauthorized disclosures of passwords and confidential system access information is prohibited • Managers must provide prompt notification to system administrators of changes in status of employees, contractors, or other users of information systems that could affect access privileges
Backup System	• Adequate plans and procedures must exist for the backup of critical computer and network resources and for the prompt recovery of data following an unanticipated loss of information due to a hardware failure or inadvertent user error
Internet Use	• All employees who have been granted access to the Internet must comply with the Internet Use Policy. This policy helps ensure that the use of the Internet supports the business needs of the Town and does not compromise the security or integrity of the Town's network.
User Passwords	• When possible, all users of the Town's information systems must be assigned a unique user ID and password to authenticate each individual as an authorized user. Passwords must be kept confidential and changed on a regular basis.
Workstation Security	• All workstations must have access controls to restrict unauthorized users from accessing information stored in the workstation. • At a minimum, the workstation security procedures in effect must prevent the unauthorized use of the workstation, associated input devices and stored programs when left unattended by intended user(s). • Specifically, all workstations must be protected at a minimum with: ✓ Ability to password protect files, ✓ Limits on the number of unsuccessful log-in attempts (3), ✓ Inactivity timeouts that will activate a screen saver and require the user to re-enter user password. (10 minutes) ✓ Software for detecting the presence of computer viruses.

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APPENDIX V
SURVEY RESULTS – IT TEMPERATURE CHECK

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IT Temperature Check
Overview

RSM developed a survey that was sent out to all Wayland Town and selected School employees in order to receive feedback regarding the current IT function. The survey included questions which addressed employees' experience with the current systems, applications and interactions with IT.

Survey responses are summarized based on the following categories:

- ✓ Respondent Characteristics
- ✓ Systems & Applications
- ✓ System & Network Availability
- ✓ Overall IT Support Experience
- ✓ IT Strategic Involvement

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IT Temperature Check

Respondent Characteristics

Respondents	Response Percent	Response Count
Assessor's Office	5.0%	3
Building Department	1.7%	1
Conservation	3.3%	2
Council on Aging	5.0%	3
DPW	10.0%	6
Facilities	3.3%	2
Finance	8.3%	5
Fire & EMS	10.0%	6
Health	6.7%	4
Housing Authority	0.0%	0
Human Resources	3.3%	2
Information Technology	1.7%	1
Library	1.7%	1
Planning Department	0.0%	0
Police Department	11.7%	7
Recreation	3.3%	2
Schools	10.0%	6
Town Administrator	0.0%	0
Town Clerk	1.7%	1
Town Surveyor & GIS	3.3%	2
Treasurer / Collector	3.3%	2
Veterans	0.0%	0
Wastewater Management District Commission	1.7%	1
Youth & Family Services	5.0%	3
Zoning Board of Appeals	0.0%	0

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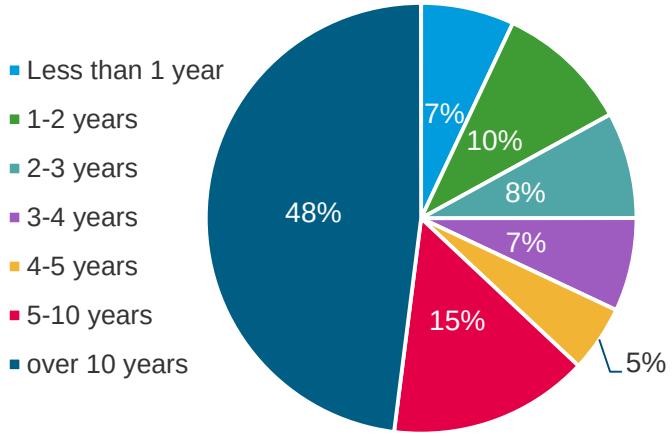
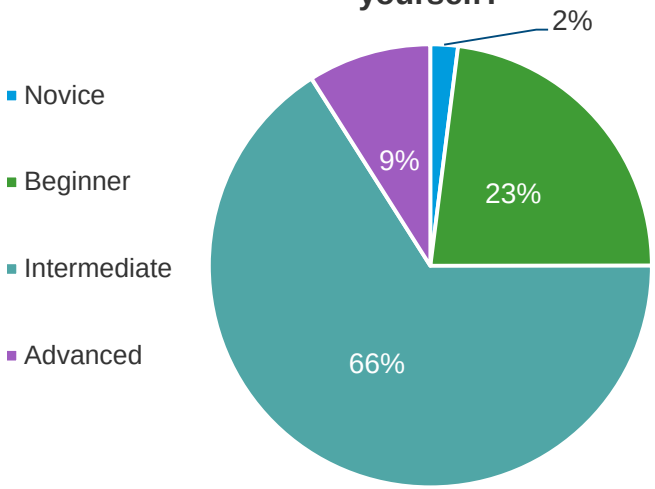
IT Temperature Check

Respondent Characteristics

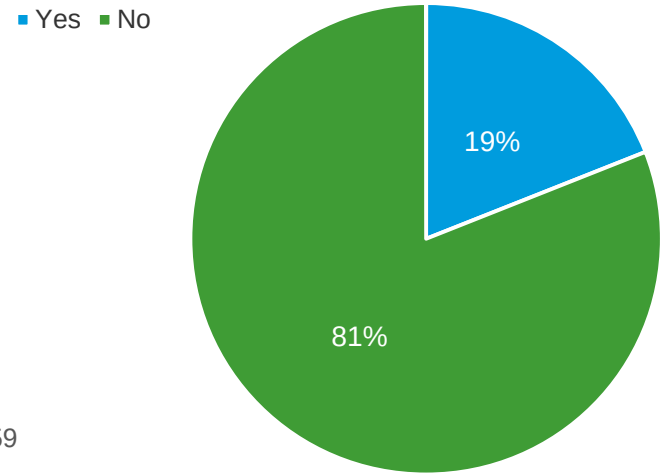
How long have you been working for the Town?



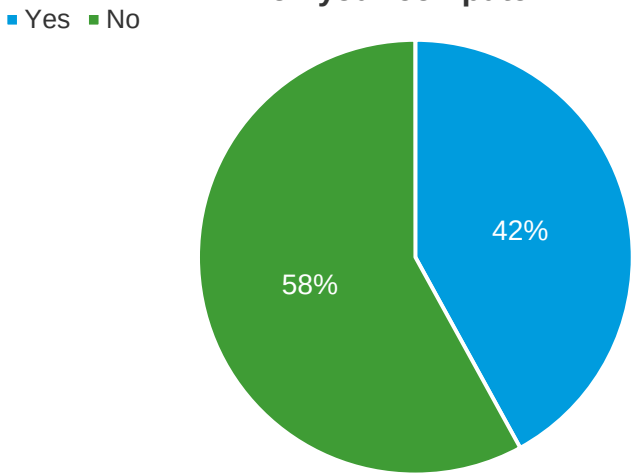
At what level of IT expertise do you consider yourself?



How long have you been working for the Town?



Are you comfortable troubleshooting problems on your computer?



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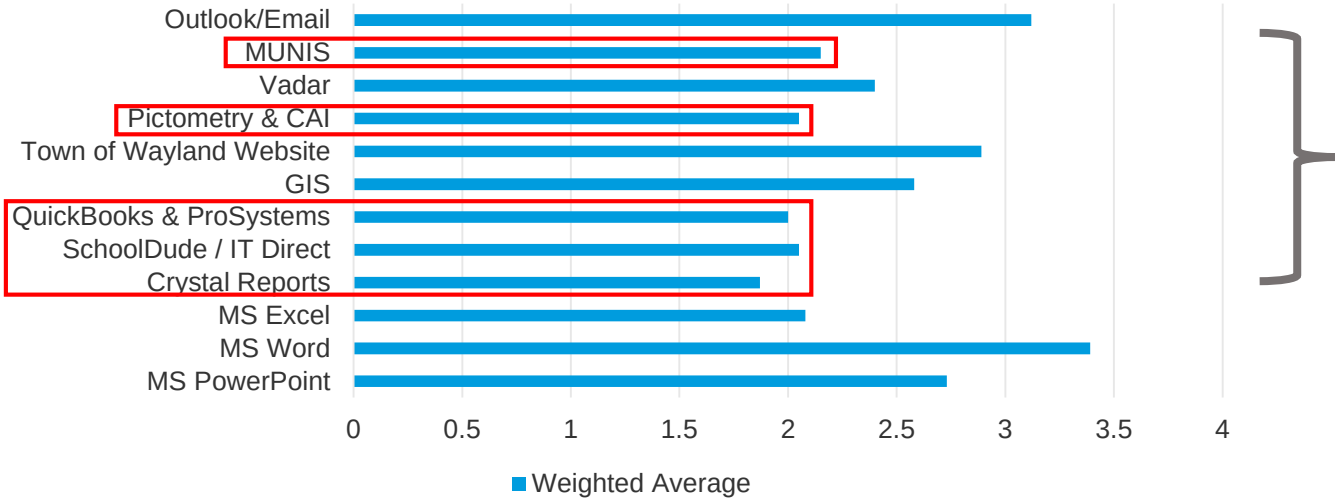
IT Temperature Check
Systems & Applications

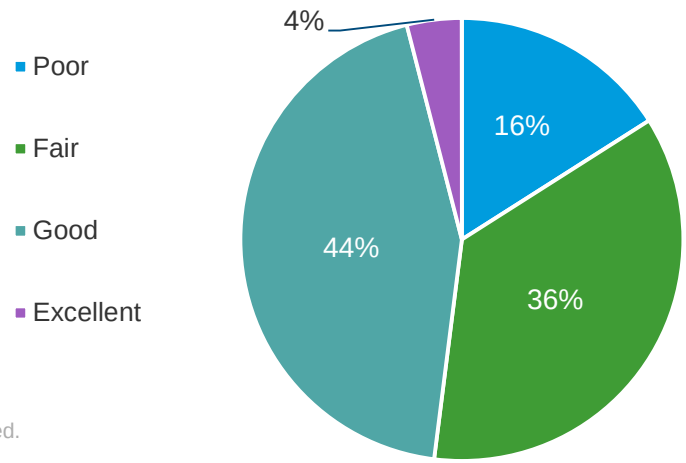
Experience	Rating
Poor	1
Fair	2
Good	3
Excellent	4

Please rate your experience with the following applications:



Town end-users identified that they had a less-than satisfactory experience with Crystal Reports, SchoolDude/IT Direct (specifically for the Town's IT Help Desk, Quickbooks, Pictometry & CAI, and most noticeably--MUNIS

How well do the current tools and technology support your ability to work efficiently?



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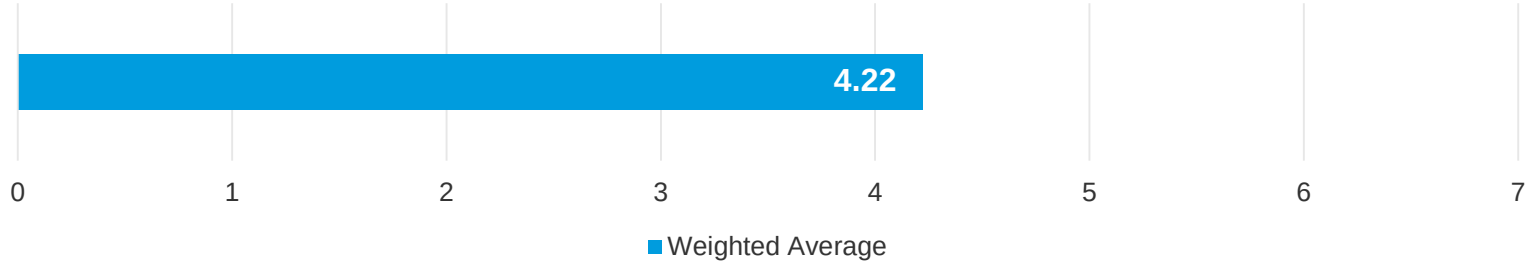
IT Temperature Check

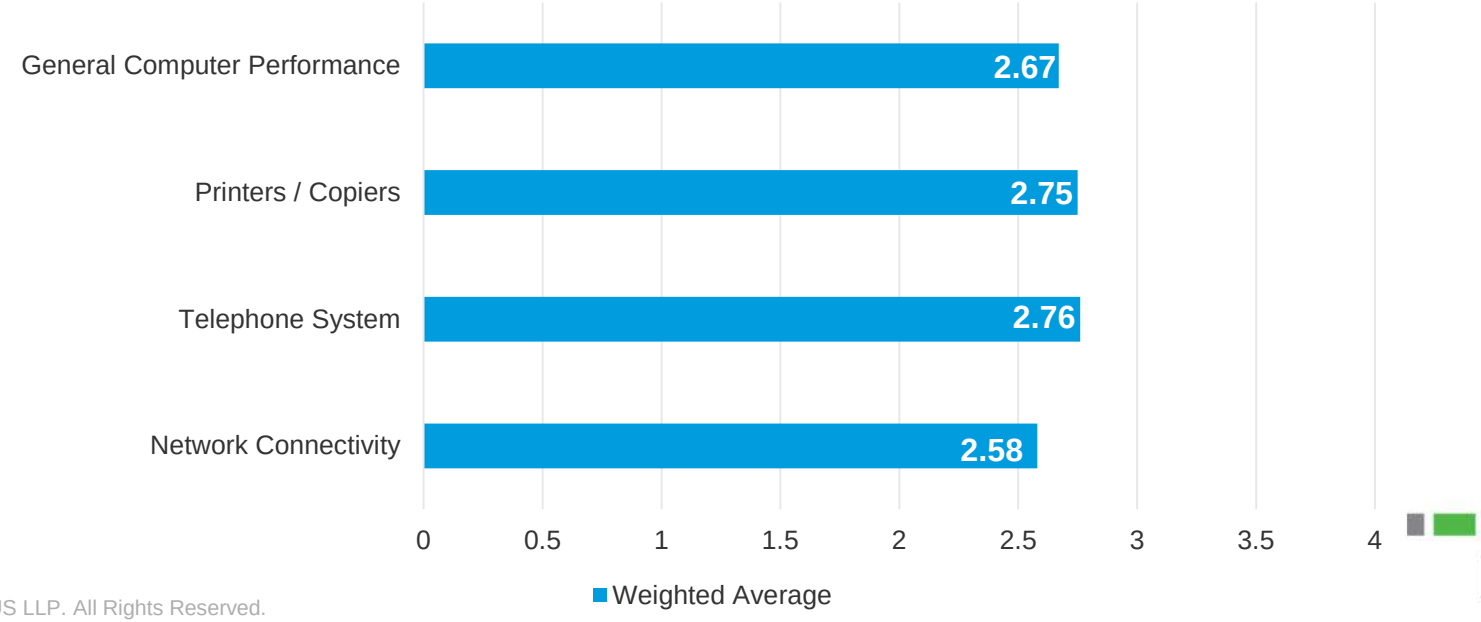
System & Network Reliability

Experience	Rating
Poor	1
Fair	2
Good	3
Excellent	4

On a scale from 1 (too slow/does not meet my needs) to 7 (fast/meets my needs), please rate the speed of applications, internet, and accessing data and documents



Please rate the reliability and availability of the following



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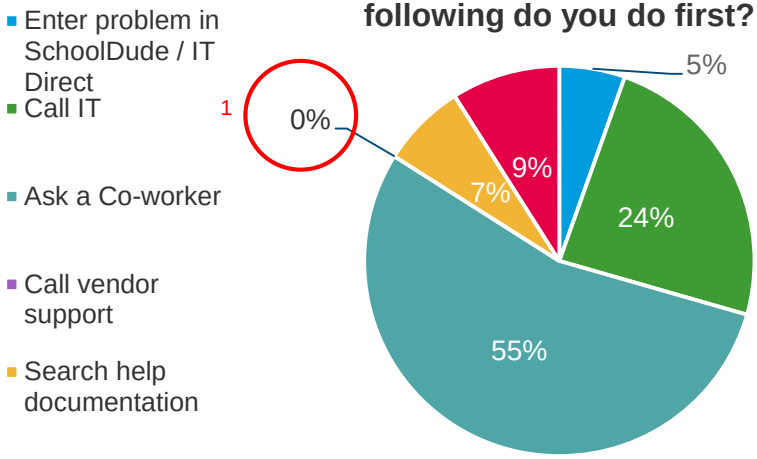
IT Temperature Check

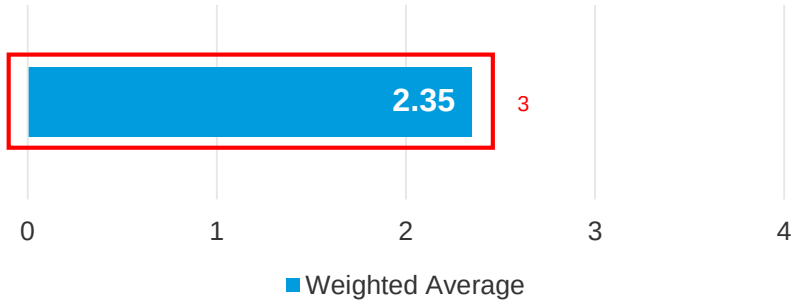
Service Management & End-user Satisfaction

Experience	Rating
Poor	1
Fair	2
Good	3
Excellent	4

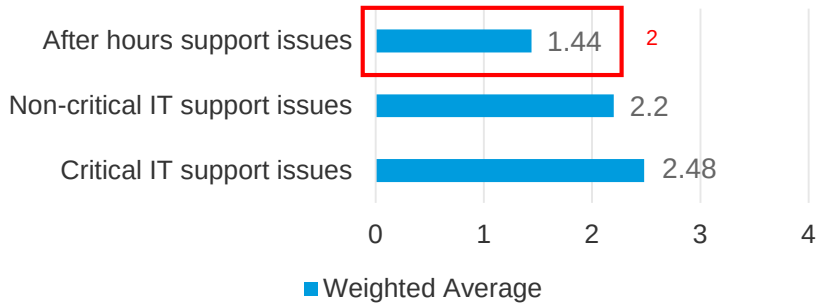
When you experience an IT problem, which of the following do you do first?



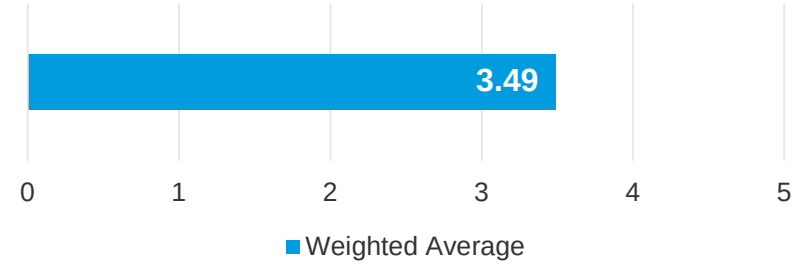
Overall, how would you rate your Help Desk / IT support experience?



Please rate the responsiveness for the following types of issues:



How satisfied are you with the rate of technological change within the Town of Wayland?



1 = Very Dissatisfied; 2 = Somewhat Dissatisfied; 3 = Neutral; 4 = Somewhat Satisfied; 5 = Very Satisfied

1. Survey responses from Town end-users indicated that they did not know where to go for answers and solutions to IT issues; in particular, many were not aware of or did not leverage available vendor support.
2. End-users did not rate a high experience quality for responsiveness to IT issues; in particular, after hours support was rated as poor to fair, and 33% of respondents identified a need for such service
3. The Help Desk experience was rated at average or below average among end-users

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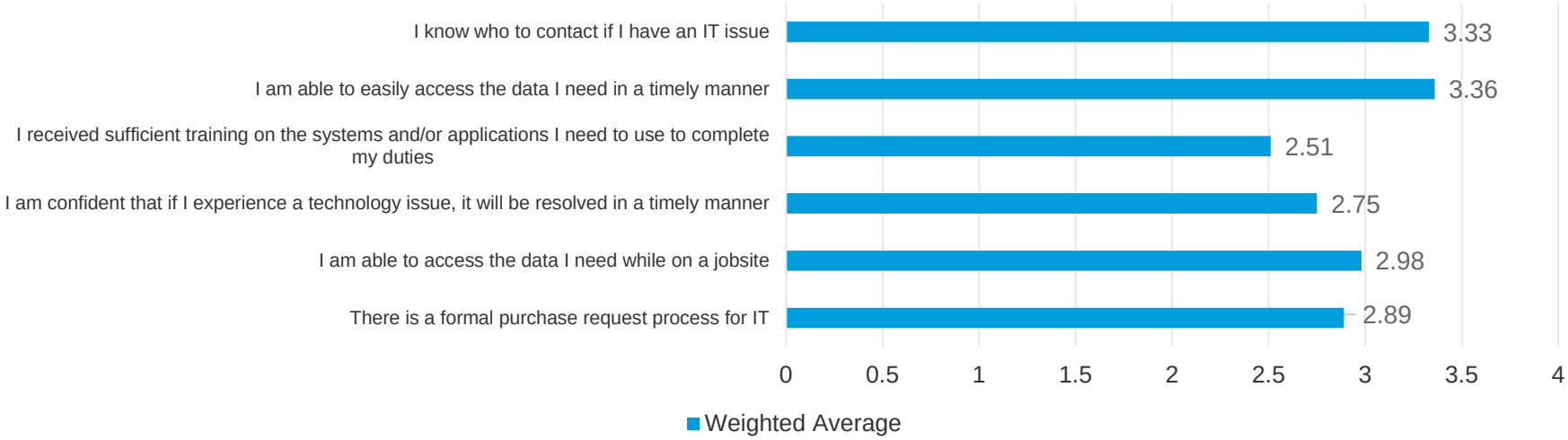
IT Temperature Check

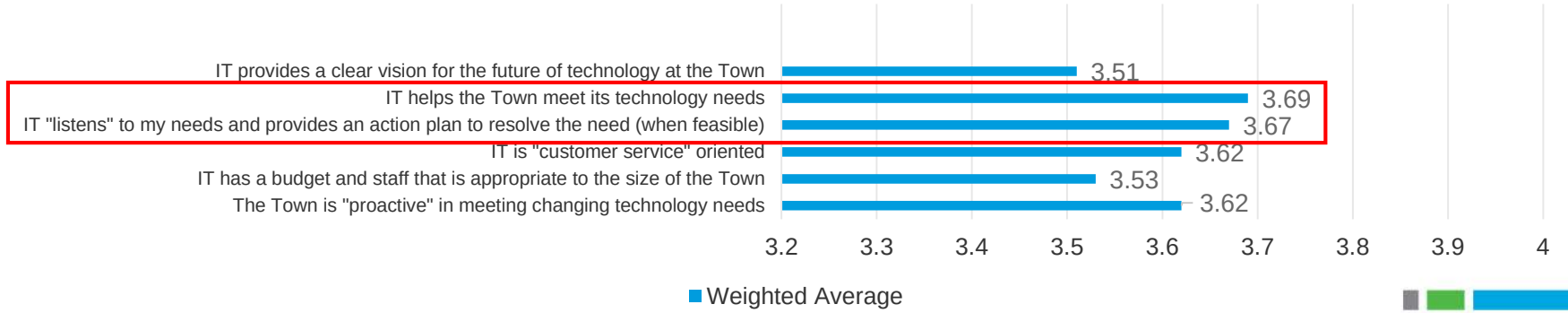
Current State, Innovation & Future Planning

Experience	Rating
Poor	1
Fair	2
Good	3
Excellent	4

Please rate the accuracy of the following statements as they apply to your experience:



Please rate your ideal importance ranking to IT providing sufficient guidance to support future planning and keep Wayland current (1 = Very Unimportant; 4 = Very Important)



End-users identified a high level of importance for all listed fields; however, issue resolution and business productivity needs were rated highest by Town respondents

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IT POLICIES & PROCEDURES

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Town of Wayland

IT Policies & Procedures

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Desktop System Standards	**Pol-10**
Incident Response Policy	**Pol-12**
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Town of Wayland

Anti-Virus Management & Malicious Code Policy

Viruses

Computer viruses are self-propagating programs that infect other programs. Viruses and worms may destroy programs and data as well as using the computer's memory and processing power. Viruses, worms, and Trojan horses are of particular concern in networked and shared resource environments because the possible damage they can cause is greatly increased. Some of these cause damage by exploiting holes in system software. Fixes to infected software should be made as soon as a problem is found.

To decrease the risk of viruses and limit their spread:

- Check all software before installing it with the Town's virus detection software.
- Use the virus detection software to detect and remove viruses.
- Isolate immediately any contaminated system.
- Report immediately any contaminated system to the IT department. At the time of detection, stop using the PC and turn it off.

Malware can destroy sensitive data, exhaust critical system resources, and disclose sensitive information. To protect sensitive Town resources the Town's networks, and all connected devices shall utilize antiviral software:

- To ensure that files accessed are virus free.
- To prevent infection via unauthorized media.
- To prevent malicious software from entering the Town's network through the email system.

Malicious code (Trojan horse software, spyware, adware, etc.) pose a significant threat to any municipality. As such, the Town of Wayland shall take action through filtering products to minimize the likelihood of infection.

Virus Protection

The Town of Wayland recognizes the major threat that computer viruses present to its computer systems and networks. As a result, several steps have been implemented to prevent infection:

Responsibilities

One of the best tools used to prevent a virus attack is stressing to users the importance of using caution when opening email and downloading anything from the Internet. Throughout the year, email messages are distributed to all staff alerting them to the latest virus threats and providing them with instructions regarding email and Internet downloads. The Town's End User Information Technology Policy also addresses this area of concern.

- *Network protection* – The Town uses the [XXXX] Endpoint Security and Control product to constantly check for viruses. A copy of this software has been installed on each file server. When any file is written to the network hard drive, the software scans the file for viruses. A complete system scan is also conducted on each file server every weekend.

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- *Desktop protection* – The Town uses the [XXXXX] Endpoint Security and Control product for individual desktop protection. Any file opened on the desktop is scanned for viruses. The [XXXXX] Antivirus software centrally controls individual PC scans on a weekly basis and reports to the Helpdesk if any issues are found. The scans are staggered throughout the week to balance the load. There is also a start-up scan upon bootup of the PC.

Virus Signature Updates

[XXXXX] currently releases new virus signatures for its products every day. The IT file server automatically checks the [XXXXX] web site for updates several times a day. If an update is available, it is downloaded and applied (no operator intervention is required).

If an update exists, it is applied daily to the technology servers and the PCs. This method ensures automatic and frequent updating of the virus signatures.

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Town of Wayland

Anti-Virus Policy

Purpose

A virus is a piece of potentially malicious programming code that will cause some unexpected or undesirable event. Viruses can be transmitted via e-mail or instant messaging attachments, downloadable Internet files, and removable media. Viruses are usually disguised as something else, and so their presence is not always obvious to the computer user. A virus infection can be very costly to the Town in terms of lost data, lost staff productivity, and/or lost reputation.

As a result, one of the goals of the Town of Wayland is to provide a computing network that is virus-free. The purpose of this policy is to provide instructions on measures that must be taken by the Town of Wayland employees to help achieve effective virus detection and prevention.

Scope

This policy applies to all computers that are connected to the Town of Wayland network via a standard network connection, wireless connection, modem connection, or virtual private network connection. This includes both Town-owned devices and personally-owned devices attached to the Town's network. The definition of devices includes desktop workstations, laptop computers, handheld computing devices, and servers.

General Policy

1. Currently, the Town of Wayland has [describe type anti-virus software in use and type of license]. Licensed copies of [name anti-virus software] can be obtained at [online/offline location]. The most current available version of the anti-virus software package will be taken as the default standard.

2. All devices attached to the Town of Wayland network must have standard, supported anti-virus software installed. This software licensing must be active, be scheduled to perform virus checks at regular intervals, and have its virus definition files kept up to date.

3. Any activities with the intention to create and/or distribute malicious programs onto the Town of Wayland network (e.g. viruses, worms, Trojan horses, e-mail bombs, etc.) are strictly prohibited.

4. If an employee receives what he/she believes to be a virus, or suspects that a computer is infected with a virus, it must be reported to the IT department immediately at [provide contact information]. Report the following information (if known): virus name, extent of infection, source of virus, and potential recipients of infected material.

5. No employee should attempt to destroy or remove a virus, or any evidence of that virus, without direction from the IT department.

6. Any virus-infected computer will be removed from the network until it is verified as virus-free.

Rules for Virus Prevention

1. Always run the standard anti-virus software provided by the Town of Wayland.

2. Never open any files or macros attached to an e-mail from an unknown, suspicious, or untrustworthy source.

3. Never open any files or macros attached to an e-mail from a known source (even a co-worker) if you were not expecting a specific attachment from that source.

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4. Be suspicious of e-mail messages containing links to unknown Web sites. It is possible that the link is a malicious executable (.exe) file disguised as a link. Do not click on a link sent to you if you were not expecting a specific link.

5. Files with the following filename extensions are blocked by the e-mail system: [list extensions]. [Describe any workaround procedures for sending/receiving business-critical files with banned extensions, such as use of a file compression utility.]

6. Never copy, download, or install files from unknown, suspicious, or untrustworthy sources or removable media.

7. Avoid direct portable drive (e.g. memory stick) sharing with read/write access. Always scan a portable drive for viruses before using it.

8. If instructed to delete e-mail messages believed to contain a virus, be sure to also delete the message from your Deleted Items or Trash folder.

9. Back up critical data and systems configurations on a regular basis and store backups in a safe place.

10. Regularly update virus protection on personally-owned home computers that are used for business purposes. This includes installing recommended security patches for the operating system and other applications that are in use.

IT Department Responsibilities

The following activities are the responsibility of the Town of Wayland IT department:

1. The IT department is responsible for maintaining and updating this Anti-Virus Policy. Copies of this policy will be posted at [list locations]. Check one of these locations regularly for updated information.

2. The IT department will keep the anti-virus products it provides up-to-date in terms of both virus definitions and software version in use. [Describe manner and frequency of updating.]

3. The IT department will apply any updates to the services it provides that are required to defend against threats from viruses.

4. The IT department will install anti-virus software on all Town-owned devices.

5. The IT department will assist employees in installing anti-virus software according to standards on personally-owned computers that will be used for business purposes. The IT department [will/will not] provide anti-virus software in these cases.

7. The IT department will take appropriate action to contain, remove, and assist in recovery from virus infections. In order to do so, the IT department may be required to disconnect a suspect computer from the network or disconnect an entire segment of the network.

8. The IT department will perform regular anti-virus sweeps of [system(s) name] files.

9. The IT department will attempt to notify users of Town systems of any credible virus threats via e-mail or telephone messages. Virus reports will not be acted upon until validated. Employees should not forward these or any virus warning messages in order to keep network traffic to a minimum.

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Department and Individual Responsibilities

The following activities are the responsibility of Town of Wayland departments and employees:

1. Departments must ensure that all departmentally-managed computers have virus protection that is in keeping with the standards set out in this policy.

2. Departments that allow employees to use personally-owned computers for business purposes must implement virus protection processes and procedures that are in keeping with the standards set out in this policy.

3. All employees are responsible for taking reasonable measures to protect against virus infection.

4. Employees must not attempt to either alter or disable anti-virus software installed on any computer attached to the Town of Wayland network without the express consent of the IT department.

Enforcement

Any employee who is found to have violated this policy may be subject to disciplinary action, up to and including termination of employment.

Declaration of Understanding

I hereby acknowledge that I have read and understand the Anti-Virus Policy of the Town of Wayland.

_____

Employee Name (print)

_____ _____

Employee Signature Date

_____

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Town of Wayland

Condition Monitoring

Program / Policy Review

An annual review of this information security program / policy document and the associated information security standards, procedures, baselines, and contingency plans shall be conducted to ensure that they effectively address security threats to the Town and accurately reflect the practices conducted by the Town.

Audits

Periodic audits shall be performed to determine the adherence to the security program.

Self-Assessments

The Town of Wayland information technology staff shall perform self-assessments to ensure that security controls are appropriately deployed and security vulnerabilities identified. The internal risk assessment will be conducted annually to identify any reasonable foreseeable threats, to assess the likelihood and potential damage of these threats and to review and determine the effectiveness of the controls and procedures in place to mitigate these risks. This annual assessment will be reviewed with the Board of Selectmen.

Prior to any new publicly accessible application or system is placed into a production environment, the Town will engage a third party to assess the application or system for vulnerabilities. Upgrades to systems currently in production will be evaluated by the [Insert - Information Security Role] and a determination will be made as to whether a third party assessment is warranted.

Independent Reviews

Independent review of the information technology infrastructure shall be conducted at least every two years. The Town of Wayland shall have penetration tests and vulnerability assessments performed against its Internet facing network connections / systems annually by independent security consultants. The Town of Wayland shall also obtain an internal configuration and vulnerability assessment (CAVA) from an independent security consultant.

The Town will engage the services of reputable and qualified independent third party security firm to conduct assessments of the external Internet perimeter as well as the internal network. These assessments will be conducted on the frequencies identified below.

1. Every two years:
    a. External Penetration Test- In depth testing of publicly accessible applications and firewalls.
    b. Internal Vulnerability Assessment- On an annual basis a review of the internal network, policies and procedures will be conducted.

2. Monthly:

    External Vulnerability Assessment - On a monthly basis a scan of publicly accessible IP addresses will be performed. These scans will identify open ports or other vulnerabilities that could compromise the security of the systems and applications.

3. Periodically, as determined by the [Insert – IT Leadership Role] of the Town will engage the services of an independent reputable third party to attempt to gain both physical and network access via various social engineering methods. These reviews will occur not less than every 24 months.

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The [Insert - Information Security Role] will review the results of these various assessments with the [Insert – Relevant Town Representatives and Selectmen].

Information Security Expertise

When in-house knowledge is not sufficient to research, implement, or audit aspects of the information security program, or if there is a gap in skills and knowledge necessary to implement security controls, third-party security specialists shall be consulted.

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Town of Wayland

Contingency Planning

Overview

The Town of Wayland is prepared for system failures, major disasters, and security incidents through a full understanding of the risks and documented plans that guide the organizations reaction and recovery. The Town of Wayland has established a Business Continuity Plan and an Incident Response Plan. Key personnel have been trained on the implementation of the plans. In addition, the Town conducts annual tests to ensure that the plans are accurate and effective in achieving their objectives. Plans are maintained throughout the year as changes are made to the technology in use; and a thorough review is performed annually. Contingency Plans are prioritized based on the results of a Business Impact analysis.

The Town of Wayland has implemented an Incident Response Plan that provides guidance to Town employees, officers, contractors, and vendors. These documents allow the Town to do the following: enable quick and efficient recovery from security incidents; respond in a systematic manner to incidents and carry out all necessary steps to correctly handle an incident; prevent or minimize disruption of critical computing services; and minimize loss or theft of sensitive or mission critical information.

Contingency Planning Policy

Responsibilities

Development of processes related to Contingency Planning shall be the responsibility of the [Insert - Information Security Role]. In fulfilling this responsibility, the [Insert - Information Security Role] will collaborate with Information Technology management and departmental managers.

Employees shall be expected to cooperate fully with processes that pertain to their areas of responsibility.

Backup and Restore

The Town of Wayland shall backup all electronically-stored (server based) information on a regular basis to ensure it is available for prompt restoration in the event of a system failure / disaster.

Detailed system restore procedures shall be maintained to ensure that information systems can be properly restored from the backup medium.

Incident Response

An Incident Response Plan (IRP) shall be maintained to ensure that security incidents are responded to and reported on in a quick and effective manner.

Disaster Recovery

A Disaster Recovery Plan shall be maintained that is focused on restoring the Information Technology environment in the event of a disaster.

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Business Continuity

Business Continuity Plans (BCP) shall be maintained (for each department) that are focused on ensuring the Town can fulfill its objectives when Information Systems become unavailable.

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Town of Wayland

Desktop Systems Standards

The Town of Wayland has prepared and adopted a separate [End User Information Technology Policy]. It should be referred to for restrictions and guidelines concerning microcomputer use. However, following are some broad guidelines for use of desktop computer systems within the framework of Information Systems Security.

Desktop computers are personal workstations that can function as stand-alone units, even though they are linked to other computers via a Local Area Network. Desktop computers include personal computers (PCs). Users of desktop computers are subject to the restrictions and guidelines for use specified in the End User Information Technology Policy.

In addition to or in conjunction with the restriction and guidelines provided by the [End User Information Technology Policy], the following guidelines should be considered:

Hardware Security

Desktop systems are to be physically secured to the extent possible. Building and office keys are registered and monitored to ensure they are returned in the event the employee resigns or is terminated.

It is the responsibility of every employee of the Town of Wayland to monitor desktop systems, which are located in open areas where the public has access, for unauthorized usage.

All removable media, such as diskettes, removable hard disks, zip disks, CD-RWs, DVDs tapes, iPods and USB thumb drives are to be stored in a secure location when the removable media is left unattended.

All computers are located away from environmental hazards.

Critical data backup media is sent to the Town's offsite storage facility.

A current inventory list of all desktop systems is maintained by the IT department.

Access Security

Password protection is used to ensure that only authorized users can access a system. If the desktop is located in an open space or is otherwise difficult to physically secure, then automatic screen saver passwords should be used with a maximum time-out period of ten minutes.

Password guidelines should include the following restrictions:

- Password length should be eight characters.
- Avoid words found in the dictionary, and include at least one numeric character in the password.
- Do not write down passwords.
- Change passwords periodically (system will force change every 90 days).
- Do not include passwords in electronic mail messages.

Data and Software Availability

Important files and programs must be backed up on a regular schedule. Data and software integrity should be checked and verified on a regular basis. Software problems should be reported to the IT department immediately.

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Confidential Information

Data transmitted via the Internet must be encrypted. Reports should be removed from printers immediately to prevent unauthorized persons from viewing sensitive data. Fixed disks, diskettes, and any removable media no longer used must be destroyed in such a manner as to prevent recovery of the data contained therein.

Software

Copyright laws protect software, and unauthorized copying is a violation of these copyright laws and the policy of the Town of Wayland. Anyone who uses software should understand and comply with the license requirements of the software. The Town is subject to random license audits by software vendors from whom it has purchased software products.

Computer Networks

Networked computers require more stringent security than stand-alone computers because they are access points to computer networks. While the IT department is responsible for setting up and maintaining appropriate security procedures on the network, each individual is responsible for operating his or her own computer with ethical regard for others in the shared environment.

The following considerations and procedures must be followed when using the Town of Wayland network:

- Check all files downloaded from the Internet. Avoid downloading shareware files.
- Test all software before it is installed to make sure it doesn't contain a virus/worm that could have serious consequences for other personal computers and servers on the Town's networks.
- Choose passwords with great care to prevent unauthorized use of files on networks or other personal computers.
- Always back up important files.
- Use (where appropriate) encrypting/decrypting and authentication services to send confidential information over a network.
- Never store passwords or any other confidential data or information on a laptop or home PC or associated removable media. All such information should be secured after any dial-up connection to the Town's network.

Virus Protection

Please reference the Town of Wayland's Anti-Virus policy for further information on required standards.

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Town of Wayland

Incident Response Policy

Policy Owner	Name the person/group responsible for this policy's management.
Policy Approver(s)	Name the person/group responsible for implementation approval of this policy.
Related Policies	List other related enterprise policies both within or external to this manual.
Related	List other related enterprise procedures both within or external to this manual.
Storage Location	List the physical or digital location of copies of this policy.
Effective Date	List the date that this policy went into effect.
Next Review Date	List the date that this policy must undergo review and update.

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Purpose

Incident response capabilities are used to monitor for security incidents, determine the magnitude of the threat presented by these incidents, and to respond to these incidents. Without an incident response capability the potential exists that, in the event that a security incident occurs, it will go unnoticed and the magnitude of harm associated with the incident will be significantly greater than if the incident were noted and corrected.

Scope

This Incident Response Policy applies to all information systems and information system components of the Town of Wayland. Specifically, it includes:

- Servers, and other devices that provide centralized computing capabilities.
- SAN, NAS, and other devices that provide centralized storage capabilities.
- Desktops, laptops, tables, smartphones, and other devices that provide distributed computing capabilities.
- Routers, switches, and other devices that provide network capabilities.
- Firewalls, IDP sensors, and other devices that provide dedicated security capabilities.

Policy

1. A security incident response capability will be developed and implemented for all information systems that house or access Town controlled information. The incident response capability will include a defined plan and will address the seven stages of incident response:

    a. Preparation
    b. Detection
    c. Analysis
    d. Containment
    e. Eradication
    f. Recovery
    g. Post-Incident Activity

2. To facilitate incident response operations, responsibility for incident handling operations will be assigned to an incident response team. In the event that an incident occurs, the members of this team will be charged with executing the incident response plan. To ensure that the team is fully prepared for its responsibilities, all team

members will be trained in incident response operations within [indicate frequency – suggest 30 days] of appointment to the team and thereafter on an [indicate frequency – suggest annually] basis.

3. Incident response will be tested [indicate frequency – suggest quarterly] through the use of tabletop exercises, [indicate frequency – suggest annually] through the use of simulation tests, and [indicate frequency – suggest every three years] through the use of a full-scale test. Where appropriate, tests will be integrated with testing of related plans (Business Continuity Plan, Disaster Recovery Plan, etc.) where such plans exist. The results of these tests will be documented, shared with key stakeholders.
4. Incident response plans will be reviewed and, where applicable, revised on an [indicate frequency – suggest annually] basis. Review will be based upon the documented results of previously conducted tests or live executions of the incident response plan. Upon completion of plan revision, updated plans will be distributed to key stakeholders.

Procedure 1

Build an enterprise incident response team and provide training:

- Identify incident response (IR) roles.
- Identify incident response responsibilities.
- Build and deliver an incident response training program. Training should address:
    - How to recognize an incident.
    - How to analyze an incident.
    - How to contain and eradicate an incident.
    - How to return to normal operations.
    - How to communicate and escalate during an incident.
    - How to operate all IR tools and resources.

Procedure 2

Build an enterprise incident response capability:

- Create an incident response plan:
    - Detail plan detection phase to establish processes to be followed to discover and identify incidents.
    - Detail plan analysis phase to indicate the measures that are to be taken to determine and understand the nature of an incident.
    - Detail plan containment and eradication phase to indicate the measures that are to be taken to limit the spread of an incident and eliminate the effects of the incident.
    - Detail plan recovery and post-recovery phase to establish a structured return to normal operations.
- Acquire incident response tools and resources:
    - Identify and acquire monitoring resources such as intrusion detection systems, traffic sniffers, and log aggregators.
    - Identify and acquire analysis resources such as dedicated workstations and forensics software.
    - Identify and acquire response resources including communications devices and contact trees.

Procedure 3

Test enterprise incident response:

- Define testing methodologies and tests. Include the following capabilities:
    - Recognition of externally and internally sourced incidents.
    - Analysis to gather incident identification information.
    - Application of containment and eradication tasks appropriate to the type of incident.
    - Restoration of normal operations.
    - Co-ordination and communications.
- Execute tests. Tests can different forms:
    - Provide notice to test participants so that they can plan workload to ensure availability for the test.

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    - Provide notice to business and IT operations staff in the event that the plan inadvertently impacts normal operations.
- Review test results and take corrective action

Procedure 4

Operate the enterprise incident response capability:

- Detect incidents and identify threats:
    - Monitor systems for signs of incidents.
    - Categorize incidents according to established standards in order to establish appropriate subsequent processes.
- Analyze discovered threats:
    - Investigate discovered incident indicators to determine if a valid threat may occur, is occurring or has occurred.
    - Fully document all aspects of the incident and incident response.
    - Prioritize response to incidents according to potential impact.
    - Notify appropriate individuals within the organization once the threat has been validated and prioritized.
- Contain threats to minimize impact and maintain operations:
    - Select a containment strategy appropriate to the incident, the impacted system, and the available resources.
    - Gather evidence to allow for further investigation, as the incident progresses and once it is complete, as well as for potential prosecution.
    - Where time and resources permit, identify the attacker to help stop the incident as well as to prepare for potential prosecution.
- Eradicate contained threats and recover to normal operations:
    - Eradicate all non-evidentiary remnants of incident.
    - Recover affected systems to pre-incident status and return to normal operations.
    - Maintain heightened monitoring of the affected system(s) subsequent to an incident to ensure there are no lingering impacts.
- Perform post-recovery tasks:
    - Conduct forensic analysis and retain evidence.
    - Conduct post-mortem and take corrective action.

Non-Compliance

Violation of any of the constraints of these policies or procedures will be considered a security breach and depending on the nature of the violation, various sanctions will be taken:

- A minor breach will result in written reprimand.
- Multiple minor breaches or a major breach will result in suspension.
- Multiple major breaches will result in termination.

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Revision History

Version	Change	Author	Date of Change

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Town of Wayland

Internet Acceptable Use Policy

Purpose

The goals of this policy are to outline appropriate and inappropriate use of the Town of Wayland's Internet resources, including the use of browsers, electronic mail and instant messaging, file uploads and downloads, and voice communications. Use of these services is subject to the following conditions.

Your Account

Internet access at the Town of Wayland is controlled through individual accounts and passwords. Department managers are responsible for defining appropriate Internet access levels for the people in their department and conveying that information to the network administrator.

Each user of the Town of Wayland system is required to read this Internet policy and sign an Internet use agreement prior to receiving an Internet access account and password.

Appropriate Use

Individuals at the Town of Wayland are encouraged to use the Internet to further the goals and objectives of the Town. The types of activities that are encouraged include:

1. Communicating with fellow employees, business partners of the Town of Wayland, and constituents within the context of an individual's assigned responsibilities;
2. Acquiring or sharing information necessary or related to the performance of an individual's assigned responsibilities; and
3. Participating in educational or professional development activities.

Inappropriate Use

Individual Internet use will not interfere with others' productive use of Internet resources. Users will not violate the network policies of any network accessed through their account. Internet use at the Town of Wayland will comply with all Federal and Massachusetts General Laws, all Town of Wayland policies, and all Town of Wayland contracts. This includes, but is not limited to, the following:

1. The Internet may not be used for illegal or unlawful purposes, including, but not limited to, copyright infringement, obscenity, libel, slander, fraud, defamation, plagiarism, harassment, intimidation, forgery, impersonation, illegal gambling, soliciting for illegal pyramid schemes, and computer tampering (e.g. spreading computer viruses).

2. The Internet may not be used in any way that violates the Town of Wayland's policies, rules, or Massachusetts General Laws including, but not limited to, [any applicable code of conduct policies, etc.]. Use of the Internet in a manner that is not consistent with the mission of the Town of Wayland, misrepresents the Town of Wayland, or violates any the Town of Wayland policy is prohibited.

3. Individuals should limit their personal use of the Internet. The Town of Wayland allows limited personal use for communication with family and friends, independent learning, and public service. the Town of Wayland prohibits use for mass unsolicited mailings, access for non-employees to the Town of Wayland resources or network facilities, uploading and downloading of files for personal use, access to pornographic sites, gaming, competitive commercial activity unless pre-approved by the Town of Wayland, and the dissemination of chain letters.

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4. Individuals may not establish Town computers as participants in any peer-to-peer network, unless approved by management.

5. Individuals may not view, copy, alter, or destroy data, software, documentation, or data communications belonging to the Town of Wayland or another individual without authorized permission.

6. In the interest of maintaining network performance, users should not send unreasonably large electronic mail attachments or video files not needed for business purposes.

7. Individuals will only use the Town of Wayland-approved services, specifically [list services], for voice communication over the Internet.

Security

For security purposes, users may not share account or password information with another person. Internet accounts are to be used only by the assigned user of the account for authorized purposes. Attempting to obtain another user's account password is strictly prohibited. A user must contact the help desk or IT administrator to obtain a password reset if they have reason to believe that any unauthorized person has learned their password. Users must take all necessary precautions to prevent unauthorized access to Internet services.

Failure to Comply

Violations of this policy will be treated like other allegations of wrongdoing at the Town of Wayland. Allegations of misconduct will be adjudicated according to established procedures. Sanctions for inappropriate use of the Internet may include, but are not limited to, one or more of the following:

1. Temporary or permanent revocation of access to some or all computing and networking resources and facilities;

2. Disciplinary action according to applicable the Town of Wayland policies; and/or

3. Legal action according to applicable laws and contractual agreements.

Monitoring and Filtering

The Town of Wayland may monitor any Internet activity occurring on the Town of Wayland equipment or accounts. The Town of Wayland currently does [not] employ filtering software to limit access to sites on the Internet. If the Town of Wayland discovers activities which do not comply with applicable law or departmental policy, records retrieved may be used to document the wrongful content in accordance with due process.

Disclaimer

The Town of Wayland assumes no liability for any direct or indirect damages arising from the user's connection to the Internet. The Town of Wayland is not responsible for the accuracy of information found on the Internet and only facilitates the accessing and dissemination of information through its systems. Users are solely responsible for any material that they access and disseminate through the Internet.

We encourage you to use your Internet access responsibly. Should you have any questions regarding this Internet Acceptable Use Policy, feel free to contact [contact name] at [contact information].

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Internet Acceptable Use Policy User Agreement

I hereby acknowledge that I have read and understand the Internet Acceptable Use Policy of the Town of Wayland. I agree to abide by these policies and ensure that persons working under my supervision abide by these policies. I understand that if I violate such rules, I may face legal or disciplinary action according to applicable law or departmental policy.

I hereby agree to indemnify and hold the Town of Wayland and its administrators, selectmen, employees, and agents harmless for any loss, damage, expense or liability resulting from any claim, action or demand arising out of or related to the user's use of the Town of Wayland-owned computer resources and the network, including reasonable attorney fees.

_____

Employee Name (print)

_____ _____

Employee Signature Date

_____

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Town of Wayland

Network Security Policy

Overview

The primary function of the network is to support user authentication, applications (including email and internet access) and file storage/retrieval.

Responsibilities

Development of policies, standards, and procedures related to network security and monitoring for compliance are the responsibilities of the [Insert - Information Security Role]. Ensuring the implementation of such processes is the responsibility of Information Technology management.
Employees shall be expected to cooperate fully with processes that pertain to their areas of responsibility.

Network Authority

All settings and access to network are under the control of the [Insert – IT Leadership Role]. The [Insert - Network Administrator Role] will be responsible for implementing and maintaining controls that result in a secure network. The [Insert - Network Administrator Role] will be responsible for maintaining windows server configuration guidelines.

Network Security Settings

Multilevel approach (user accounts and access control lists) will be used to secure access to the network. Security settings and configuration are the responsibility of the [Insert - Network Administrator Role].
Services and applications that will not be used must be disabled whenever practical.

Application Access

Application access will be assigned on a “need to know” basis.

Activity Log

An activity log will be maintained and reports generated on a scheduled basis. Such reports are to be reviewed daily by the [Insert - Network Administrator Role] or the designee for potential security incidents. The [Insert - Information Security Role] or designee will also periodically review activity reports.

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Town of Wayland

Personnel Security

Overview

Town of Wayland personnel and appropriate third parties are expected to abide by the Information Security program. In an effort to ensure personnel are diligent in protecting information, the Town: performs background and security screening of employees; requires employees to sign acceptable use agreements; has implemented sanctions for information security violations; has implemented a security awareness training program.

Personnel Security

Responsibilities

Development of processes related to Personnel Security shall be the responsibility of [Insert - Information Security Role]. In fulfilling this responsibility, [Insert - Information Security Role] will collaborate with Information Technology and Human Resources management. Employees shall be expected to cooperate fully with processes that pertain to their areas of responsibility. Employees are expected to act as agents of the security program by taking an active interest in preserving and protecting the Town's information systems and the data for which they are responsible.

Background Screening

The level and depth of screening will be commensurate with level of access to information and information systems.

Acceptable Use Agreements

During new hire orientation as well as annually thereafter, all employees shall be required to review and sign/acknowledge:

- [Insert finalized list of any required IT policies which require employee signature, recommend Acceptable Use Policy, Information Security Policies and Anti-Viral Policies]

Separation and Rotation of Duties

Separation of duties is based on the premise that no one person should be permitted to dominate one function from start to finish Duties and responsibilities of operations personnel have been established to provide both separation and rotation of duties.

Termination

Upon termination of any employee, an employee status form is completed to notify appropriate parties to terminate all access to Town information systems and facilities.

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Security Awareness and Training

Security Awareness training is done annually to ensure that all employees are trained and educated on the Town of Wayland's information security policies, standards, and practices. All employees are required to participate and attendance will be documented. For new hires, training shall be completed prior to an individual being granted access to information and/or information systems.

Sanctions

Violations are reviewed by the Town on a case by case basis to determine appropriate discipline for employees who have failed to meet the requirements for information security and/or violated information security policies and procedures.

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Town of Wayland

Systems Access

Mainframe Authority

All settings and access to the operating system are under the control of the [Insert - IT Leadership Role]. The [Insert - Information Security Role] will be responsible for maintaining a current and secure operating system.

Responsibilities

Development of policies, standards, and procedures related to Access Control and monitoring for compliance are the responsibilities of the [Insert - Information Security Role]. Ensuring the implementation of such processes is the responsibility of Information Technology management.

Employees shall be expected to cooperate fully with processes that pertain to their areas of responsibility.

User Access

Access to information shall be authorized for employees based upon their duties. Access shall be restricted to the minimal amount required for business need (least privilege basis).

Administrator Access

Membership in privileged groups shall be restricted to a minimal level that still allows for operational effectiveness.

User Provisioning

A formal user account workflow process exists to facilitate access levels. Prior to receiving access to IT systems, employees must complete Information Security training and sign an acknowledgement that they understand their information security responsibilities and the potential sanctions.

Identification and Authentication

Access to and use of information technology resources (applications, operating systems, network devices) requires an individual to have unique user identification and to authenticate by providing at least one factor (password) of authentication.

Passwords

Passwords are a key component of the authentication process and, therefore, all passwords must conform to the password standards. Systems shall be configured to require users to meet complexity requirements.

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Logon Parameters

Logon prompts shall be configured securely and record logon activity.

Sessions

Inactive sessions shall timeout and require re-authentication after a period of inactivity.

Termination of Access

Upon notification of any employee termination, access to systems will be disabled and/or deleted in a timely manner according to Human Resources specifications.

Review

The [Insert - Information Security Role] will facilitate access control reviews on a periodic basis to ensure that all access granted is appropriate.

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RSM US LLP

Address
City
Phone

+1 800 274 3978
www.rsmus.com

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