{IT Strategic Plan}

TOWN OF NANTUCKET, MA | MAY 2016

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1 Executive Summary

1.1 PURPOSE OF THE PLAN

The intent of this Information Technology Strategic Plan is to ensure that the defined projects and technology initiatives are aligned with the overall IT goals and are supportive of the general business goals of the Town. The IT Strategy is guided by an IT Mission and Vision which were created as part of the visioning process. The IT Assessment is a report card - a snap shot in time - on how IT service delivery is performing overall. The IT Assessment provides a baseline against which to measure the success of future IT initiatives associated with the IT Strategic Plan. In contrast, the IT Strategy is a "living" document that departments, in partnership with the Town's Information Technology Department, will update on a regular basis. A project portfolio represents the tactical plan for improvements to the IT operations as well as various technology improvements throughout the Town. The following visual depicts the nature of this inter-relationship:
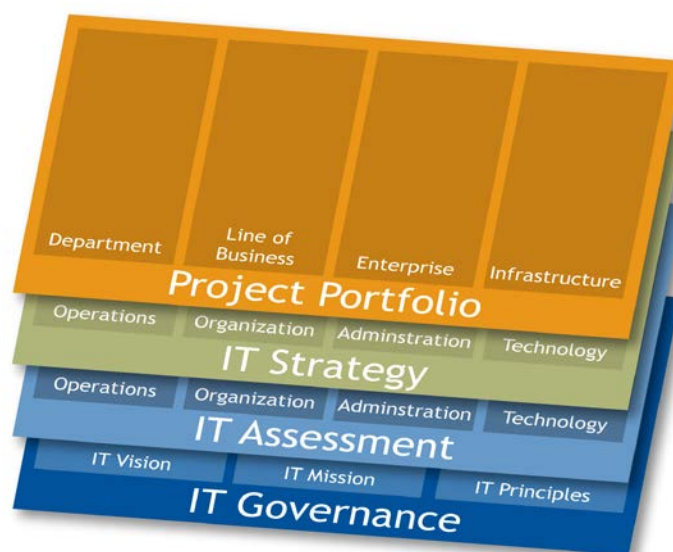
The process begins with the overall goals of management. The IT Assessment provides insight into the current state of IT, seeking to answer questions in the following areas:

- Operations: How efficient are our business processes and how effective is the supporting technology?
- Organization: Do we have the correct number of staff with the right skills?
- Administration: Do we properly manage and administer the technology we have?
- Technology: Do we procure and support the most appropriate equipment and systems?

The comprehensive IT Assessment process provides a framework for developing this IT Strategic Plan, and the recommendations for investments in technology result in a series of planned projects organized in a Town-wide portfolio.

1.2 CURRENT STATE OF IT

A thorough review of IT across the Town was conducted with the following sections summarizing the findings of the IT Assessment Report.

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1.2.1 Major Strengths and Weaknesses

The following is a summary of key strengths and weaknesses identified during the Information Technology Assessment process.

Strengths

- Town management supports IT as a strategic resource.
- Helpdesk support has improved over the past few years via the rollout of a new helpdesk ticketing system.
- The Town is leveraging the value of IT by investing in an expanded social media presence.
- Minimal staff turnover in IT Department.
- Strong customer service culture throughout the Information Technology Department.
- IT staff members have good synergy and are well regarded by customers.
- The IT staff are regarded as a very hard working group.
- A majority of the Town sites are connected using a fiber optic network, providing high speed connectivity.
- Department-level IT staff.

Weaknesses

- Lack of formalized long term IT "Strategy"
- Procedures for reporting IT issues are in place, but not consistently followed by customers.
- No formal IT project request process or project portfolio management.
- Data is not centralized onto a single data storage system (SAN).
- An obsolete database system (FoxPro) is used and has not been supported by the developer in quite some time.
- Few opportunities for training both for Information Technology staff and customers
- A standard remote access system is not used town-wide. A standard VPN access mechanism should be implemented using the existing system (SSL based VPN).
- Internet reliability and bandwidth limitations.
- Departments' inconsistent IT procurement practices.
- The Town has not leveraged server virtualization technologies to leverage hardware efficiencies and enhance system availability.
- A Disaster Recovery (DR) plan that takes into consideration the Recovery Time Objectives and Recovery Point Objects for all of the applications (and data) used by the Town should be developed and tested on a regular basis.

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1.3   SIGNIFICANT RECOMMENDATIONS

As identified in the IT Assessment Report, the Town of Nantucket has a well-functioning Information Technology Department considering its small size. The staff and management within the IT Department are well regarded by Town staff and are interested in best serving the needs of the Town. This IT Strategic Plan has identified several strategies for the Town to continue to improve its IT services going forward. Many of the strategies are rooted in three key concepts:

- IT Governance
- Project Portfolio Management
- Staffing

This IT Strategic Plan provides tactical guidance on implementing the strategies in these key areas, as well as an IT Project Plan that will serve as the starting point for the Town's Project Portfolio.

1.3.1   IT Governance

IT Governance formalizes the process that is used to evaluate the impact of applying technology that extends, expands, or improves the services available to Town employees, residents, businesses, civic groups, or other interested parties. This model should include:

- An IT governance team consisting of various departmental representatives to evaluate, prioritize, and approve all information technology and related services. This team is responsible for aligning and ensuring allocation of resources to implement initiatives that are consistent with the IT Strategic Plan.
- A technology review process that will address the need for the Town to review and prioritize appropriate technology projects for implementation. The review process will offer a consistent framework for the Town to develop and evaluate project requests. The review process is a method of identifying technical and organizational impacts related to technology projects including adherence to technology standards and regulatory issues. This process will not deal with detailed project design, engineering, coding, or implementation specifics.
- A process to develop and advance project requests for approval, prioritization, and inclusion in the Capital Planning and budgeting process.

An IT Governance Model has been included in ***Appendix A: IT Governance Model****.*

1.3.2   Project Portfolio Management

Project Portfolio Management refers to the process that is used to manage the project list that results from the IT Governance review process. All information technology projects should be added into a consolidated project portfolio that can be utilized for evaluation, prioritization, planning, budgeting, and project management. In the near term, these projects should be incorporated into the project review process to determine the feasibility of proceeding forward with implementation per the IT governance team.

Each technology project initiative, whether approved or in the planning stages, should share the same consistent attributes in the Master Project Portfolio Template. Many of these attributes, such as high level cost estimates and timing, are meant to place projects in a category for planning purposes. Please refer to **Appendix C: Master Project Portfolio Template Description** for a description of attributes used in the Master Project Portfolio Template. The template itself is provided to the Town as a separate Microsoft Excel file.

1.3.3 Staffing

In Plante Moran's assessment of the Information Technology function, it was identified that there is room to supplement the IT Department's current organizational structure by increasing staffing with either new Town staff or external consulting resources. This current staffing shortfall leaves the IT Department shorthanded when handling its various daily responsibilities, which includes:

- Help desk

- Training

- Software maintenance

- Hardware maintenance

- Clerical duties (e.g., contract management and AP processes)

The addition of staffing resources is envisioned to provide support at the help desk by triaging and recording new issues in the existing help desk software, as well as providing basic support for issue resolution. This should effectively allow the IS manager to assume more of a Chief Information Officer (CIO) type of role, focus more time on IT strategy, and leverage the current staff to work on more specialized tasks and assignments. This could include providing application-specific support for the financial system, a future ePermitting application as well as other enterprise applications.

1.4 IT MISSION AND VISION

The IT Strategic Plan was developed to ensure that the identified technology projects and initiatives are aligned with the priorities of the Town. To this end, technology vision and values statements were discussed by the Town's IT stakeholders in support of these projects:

1.4.1 IT Mission

The Town of Nantucket will be a leader in the use of technology which enables more effective and transparent government.

1.4.2 IT Vision

- Provide collaborative technology solutions for all facets of Town government in order to ensure their business problems and goals are being met.
- Provide technology services that streamline the way customers interact with Town government.

1.4.3 IT Guiding Principles

A set of guiding principles was developed and are based on sound business practices with respect to the information technology industry domain. Each of these principles is intended to guide IT decisions that are made throughout the Town and will play an important role in IT Governance for the Town.

- Provide Town stakeholders with timely, convenient access to information and services through the appropriate use of technology.
- Evaluate business processes for redesign opportunities in conjunction with the appropriate deployment of supporting technology to achieve productivity improvements and other benefits that tie to departmental and Town goals and objectives.
- Strive to identify and exploit common business functions and processes across organizational boundaries when implementing new technologies and business applications.
- Leverage the deployment of existing technologies versus procuring new technologies that perform similar functions.
- Implement proven, value-oriented technologies.
- Hardware and software shall adhere to vendor-independent standards and minimize proprietary solutions.

- Manage information technology as an investment.
- Business needs drive information technology solutions. Technology is a means to an end not an end in itself.
- Deployment of departmental technology is a shared responsibility between IT and the department. Both will assume accountability for delivering productivity gains derived from technology investments.
- Approach IT projects as a partnership of the IT Department and departmental staff.
- Commit to employee development and training of Town staff on technology tools.
- Consider the purchase, integration and support of commercial-off-the-shelf (COTS) software requiring minimal customization as the first choice when implementing new business software applications.
- When possible, capture data once in order to avoid cost, duplication of effort, and potential for error and share the data where appropriate.
- The portfolio of technology projects, individual projects, and resource allocation will be managed using standard tools and methodologies.
- Security will be considered in all aspects of technology operations.

1.5   IT STRATEGIC GOALS

The following five technology goals were developed to ensure that defined projects and technology initiatives are aligned with the overall IT goals and supportive of general business goals of the Town.

1.5.1   Goal #1: Align technology investments and services with IT Strategic Plan

Ensure that the Town's future technology investments and IT services are aligned and prioritized according to the Town Strategic IT Plan. Acquisitions should be driven by business needs.

Objectives:

1. Refine existing processes that directly relate to project planning, budgeting, and deployment-related processes.

2. Establish and implement a technology governance process to direct and oversee the acquisition, development, and deployment of technologies which meets ROI guidelines and are consistent with the plan.

3. Establish consistent procedures across the Town to ensure that all departments, as part of the development and deployment of technology-based solutions, add value to services that meet Town business needs.

4. Develop and regularly review a technology implementation program.

5. Strategically source new technologies, and look to external vendors to bridge gaps with in-house resources.

1.5.2   Goal #2: Maximize Quality of Service

Ensure that services and infrastructure provided by the IT Department are adequately supporting the critical business functions of the Town.

Objectives:

1. Ensure excellent communication between the IT Department and Town stakeholders.

2. Refine the Town's Project Methodology detailing the steps for initiating projects, having projects approved, prioritized, tracked, and ultimately implemented.

3. Implement tools, technologies, and procedures that will enhance the ability to more effectively and efficiently support and manage the existing IT infrastructure.

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4. Initiate activities that will improve the overall security of technology assets and data within the Town.

5. Implement technologies and associated processes that reduce technology costs, including, but not limited to, cloud-based software.

6. Implement web-based tools and mobile applications to better serve the Town's citizens and visitors as part of an overall digital strategy deployment.

1.5.3 Goal #3: Enforce standards, policies, and procedures

Establish, communicate, and implement a framework of standards, policies, and procedures that results in a consistent methodology for the achievement of operational excellence.

Objectives:

1. Establish and implement a standards-based environment for the Town-wide acquisition, development, and deployment of technologies. This includes standardizing, to the greatest extent practical, databases and hardware to encourage single points of data entry and ease of data extraction.

2. Adopt a policy to streamline departmental IT purchases including technical requirements to which purchases must adhere.

3. Establish consistent procedures when interacting with departments as part of the development and deployment of technology-based solutions.

4. Implement practices and procedures to mitigate/minimize risks associated with technology initiatives.

1.5.4 Goal #4: Adopt processes to move towards a paperless environment

Develop and implement policies and procedures that result in a consistent methodology for archiving electronic records, reducing the need to retain paper files.

Objectives:

1. With the implementation of a new ePermitting system, evaluate record retention needs to determine the data that need to be converted.

2. Determine easy and low-cost opportunities to move the Town culture towards a paperless environment.

3. Evaluate document management systems to insure that files are integrated with financial transactions, quickly, easily and are retrievable.

4. Ensure that proper attention is given to data security.

1.5.5 Goal #5: Move toward Digital Government model

An increasingly mobile and sophisticated constituency and workforce calls for technological solutions with critical business information available in real-time that are aligned with service innovation. This goal looks to most effectively implement digital solutions that take into account changing expectations of increasingly connected people.

Objectives:

1. Implement e-Government / m-Government technology solutions to innovate or improve government services as well as interactions with citizens, employees, businesses, and other government agencies.

2. Improve online services for citizens/customers in terms of access to service, navigation, consistent look and feel, and usability.

3. Document the critical business reporting requirements, and ensure that the requirements are met when implementing future computer systems.

2 Information Technology Assessment Summary

As part of the assessment, each of the assessment areas, components, and sub-components were reviewed and assessed against best practices. Each was assigned a maturity rating ("gap analysis") and risk to the Town relative to the current situation and not performing the suggested remedies. The following scales have been developed to measure the maturity and risk levels for the various IT assessment areas:

Rating	Maturity Description		Risk	Level
●●●●●	Best Practice in the Industry		Low	■
●●●●○	Mature or Fully Implemented		Moderate	▲
●●●○○	Progressing / Fair		High	●
●●○○○	Improvements Identified			
●○○○○	Needs Significant Improvement			

It is rare that a 5-star rating is given in any area, as it represents an absolute best practice in the industry. Plante Moran recommends organizations identify strategic and high value service areas and strive for 4-stars or better in those areas. In addition, depending on an organization's tolerance for risk, Plante Moran recommends moderate or low level of risk. Any high risk areas should be addressed immediately through risk mitigation strategies (e.g., risk transference, elimination of risk, etc.).

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The table below provides a summary of maturity and risks associated with the assessment areas identified for the IT review:

Assessment	Maturity	Risk
Organization		
Governance		
Organizational Structure	●●●○○	▲
Organization Benchmarks	●●●○○	■
Succession Planning	●●○○○	■
Staff Compensation	●●●○○	▲
Support		
Staff Complement	●●●●○	■
Staff Development	●●○○○	▲
Job Descriptions	●●●○○	■
Staff Competencies	●●●●○	■
Performance Evaluations	●●●●○	■
Recruiting	●●●○○	■
External Service Providers	●●●○○	■
User Liaisons	●●○○○	■
Steering Committee Role	●●○○○	▲
Service Level Agreements	●●●○○	▲
User Satisfaction		
Responsiveness	●●●●○	■
Effectiveness	●●●○○	■
Communication	●●●○○	▲
IT Leadership		
Technical	●●●○○	■
Business	●●○○○	▲
Administration		
Delivery		
Project Management Approach	●●○○○	▲
SLA Reporting	●●○○○	▲
Problem Reporting	●●○○○	▲
Helpdesk Administration	●●○○○	▲
Network / Workstation Management	●●○○○	▲

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Assessment	Maturity	Risk
Software Deployment	●●○○○	▲
Application Development	●●●○○	■
Document Management	●●○○○	■
IT Strategy		
Current Plans	●●○○○	▲
Project Prioritization	●●○○○	▲
Technology Procurement	●●○○○	▲
Budgeting	●●●○○	■
Project Portfolio Management	●●○○○	▲
Business Case Development	●●○○○	▲
Standards	●●●○○	■
Planning Process	●●○○○	▲
Policy		
User Policies & Procedures	●●●○○	■
IT Policies and Procedures	●●○○○	▲
Business Continuity Planning	●●○○○	■
Security Management	●●○○○	▲
Disaster Recovery	●●○○○	●
Technology		
Internet		
Remote Access	●●●○○	■
Website & Security	●●●○○	■
Web Strategy	●●●○○	■
Cloud Computing	●●○○○	■
Data		
Data Backup	●●●○○	■
Network (LAN/WAN)		
Servers/Storage	●●●○○	■
NOS	●●○○○	▲
Network	●●●○○	▲
Applications		
Enterprise Software Applications	●●●○○	■
Line of Business Applications	●●●○○	▲

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Assessment	Maturity	Risk
Reporting/Analytics	●●○○○	■
Integration	●●○○○	■
End-User Computing		
Workstation Strategy	●●●○○	■
Printer Strategy	●●●○○	■
Office Automation	●●○○○	■

3 Information Technology Strategies

The IT Strategies and Initiatives help to form the action plan behind the IT Strategic Goals and Objectives. Several initiatives have been identified for the Town to undertake that support the IT Strategic goals. The IT Tactical Planning and Implementation sections provide additional guidance on undertaking the initiatives.

3.1   IT STRATEGIES AND INITIATIVES

3.1.1   Goal #1: Align technology investments and services with IT Strategic Plan

Create an appropriate IT Governance Model.

There is a need to establish an IT governance model to evaluate the impacts of applying technology that extends, expands, or improves the services available to Town employees, residents, businesses, civic groups, or other interested parties. This model should include:

- An IT governance team consisting of various departmental representatives to evaluate, prioritize, and approve all information technology and related services. This team is responsible for aligning and ensuring allocation of resources to implement initiatives that are consistent with the IT Strategic Plan.
- A technology review process that will address the need for the Town to review and prioritize appropriate technology projects for implementation. The review process will offer a consistent framework for the Town to develop and evaluate project requests. The review process is a method of identifying technical and organizational impacts related to technology projects including adherence to technology standards and regulatory issues. This process will not deal with detailed project design, engineering, coding, or implementation specifics.
- A process to develop and advance project requests for approval, prioritization, and inclusion in the Capital Planning and budgeting process.

An IT Governance Model has been included in **Appendix A: IT Governance Model**.

Establish a standard project initiation protocol.

Traditional technology projects are defined as those projects that utilize computerization concepts and related technologies that can involve informational or financial transactions, or introduce new or changed business processes. Technology projects that are subject to review include initiatives that require Information Technology Department resources or other departmental resources that provide the basis for capital projects, unscheduled technology requests, and/or those that require Town wide systems, networks, or infrastructures. Technology projects also include systems that are accessed via the Internet such as cloud-based applications. Projects that have already been approved and are undergoing scope changes or require increased funding must undergo this review process to continue.

This process will be used to develop and advance project requests with the assistance of the Town IT governance team and other identified persons for the purpose of submitting them for approval, prioritization, and inclusion in the capital planning and budgeting process as noted above. In addition, the project initiative process should include a Cost/Benefit or Return on Investment (ROI) analysis to assist with evaluating and prioritizing projects. Please refer to Appendix B for more information on technology project cost/benefit analysis.

Create a Project Portfolio Management process.

All information technology projects should be added into a consolidated project portfolio that can be utilized for evaluation, prioritization, planning, budgeting, and project management. In the near term,

these projects should be incorporated into the project review process to determine the feasibility of proceeding forward with implementation per the IT governance team.

Projects and initiatives defined in development of the Plan can be further classified as follows:

- **Departmental Projects**: A project that is specific to a particular department and is not dependent on other projects outside of the department.
- **Enterprise Projects**: A project that will impact either multiple departments or the entire enterprise (e.g., implementation of a new document management and imaging system).
- **IT Operational Projects**: A project that may not be readily apparent to departments, but provides some level of improvements to the underlying organization around technology, administration of technology, or technical infrastructure of the Town.

Each technology project initiative, whether approved or in the planning stages, should share the same consistent attributes in the Master Project Portfolio Template. Many of these attributes, such as high level cost estimates and timing, are meant to place projects in a category for planning purposes. Please refer to Appendix C for a description of attributes used in the Master Project Portfolio Template. The template itself is provided to the Town as a separate Microsoft Excel file.

Implement a standardized approach to Project Management.

The project initiation process, project portfolio, and the technology review process all work in conjunction to provide an overall methodology with which to manage the entire lifecycle of a project from initiation through analysis, approval, funding, tracking, and ultimately implementation. The Town's IT staff should develop an approach to visibly managing projects within the Town.

The Town should devote resources to roll out this methodology in a consistent, repeatable and standardized way for all IT related projects. A standardized project management methodology for the Town should include:

- Project charter that describes the overall intent, responsibility, and benefits of the project
- Project schedule including work breakdown structure, timing, and level of staff resource commitment
- Periodic status reports
- Communication plan, along with change management plan for significant projects
- Project dashboard including overall results relative to schedule and budget

Over time, the approach should be revised to include other outcomes as necessary.

Update the strategic technology plan routinely.

Annually review and update the IT Strategic Plan. The annual review process should be initiated by the IT Manager. The annual process should minimally confirm organizational goals, monitor progress of prior year actions and tactics, and adjust planned projects to ensure alignment with Town business needs and timed to the budget process.

3.1.2 Goal #2: Maximize Quality of Service

The Town's critical business functions rely heavily on the services of IT and the infrastructure they support. This IT Strategic Goal implements service improvements that increase efficiency, reduce costs, and enhance security.

Role of IT

Per the IT Assessment Report, we propose that the IT department's highest and best use is to operate more strategically as a business partner rather than simply as a service provider for the Town's departments. The Town should consider creating a Chief Information Officer position responsible for executing the Town's information technology strategic plan as well as oversight of information technology

project management. This would shift the IT department's current responsibilities away from the previously listed tasks to instead encompass:

- Project management
- Business analysis
- Vendor management

IT Infrastructure Investments

Based on the desired IT service levels, evaluation of current technologies and initiatives identified as part of the overall IT Strategic Plan, the Town should invest in additional information technology resources in order to:

- Maintain and support the existing and future IT infrastructure at the Town
- Participate in IT strategic planning and governance initiatives
- Participate in consistent, repetitive processes to provide services and meet or exceed SLA targets
- Monitor system/vendor performance and adherence to standards and escalate any deficiencies
- Provide support for Solution Optimization and Modernization strategies
- Provide resources for the deployment of new technologies that are aligned with this IT Strategic Plan
- Provide appropriate plans and implement services and solutions to ensure confidentiality, availability and integrity of data (e.g., security, disaster recovery, etc.)

Based on changes to the IT infrastructure over time, roll-out of new technologies, changes in regulations, etc., Information Technology staff may need additional training which should be incorporated into their annual performance review process. In addition, a technology refresh policy should be maintained to ensure regular replacement of devices, servers, and other IT infrastructure elements at the Town.

Communication / Collaboration

Collaboration is defined as an iterative process where two or more people or organizations work together toward an intersection of common goals. There are several new ways for organizations such as the Town to collaborate and achieve better results through collaboration software.

Results of projects and other initiatives throughout the Town can be enhanced through collaboration. The Town should invest in collaboration tools to improve the overall transfer of knowledge and eliminate organizational/other barriers. Collaboration tools can provide an effective way to improve results relative to internal initiatives as well as those conducted with other organizations.

Given this distinction, the Town could utilize a product such as Microsoft SharePoint as its primary tool for collaboration on projects as they are defined in the project portfolio strategy. For each project, a separate SharePoint site could be setup to include the following elements which will allow for greater collaboration:

- **Wiki**. A wiki is a website that uses wiki software allowing the creation and editing of any number of interlinked Web pages, using a simplified markup language. Wikis are often used to create collaborative websites and to power community websites.

- **Blog**. A blog is a type of website usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video.

- **Document repository**. A repository where documents can be shared. Users can view, print, download, check in/checkout documents from the repository.

- **Calendar**. A calendar feature indicating important milestone dates and regularly scheduled meetings.

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Furthermore, other network-based tools that allow for improved collaboration should be vigorously explored by the Town. For example, instant messaging (IM) is an excellent alternative to using the phone and/or e-mail when a quick response to a question is needed. Through IM, users can set their status such that other users who are online know when they are available and when they are busy. IM provides an excellent means for two-way communications to take place with minimal disruption such that projects and processes can move forward.

The Town should also continue to explore collaboration opportunities outside of the Town as well (i.e., with other communities within or outside the Town) relative to the deployment of information technology.

Modernization

A well-executed modernization strategy will provide guidance for when to replace technology that is becoming obsolete. The Town should use technology needs assessments to determine its specific needs and how to best suit those needs through technology – whether with current or future technologies.

Likewise, before new technologies are procured by the Town, ensure that the new technology can accommodate any likely changes to the Town's overall business strategies during the technology's useful lifecycle. Incorporate modernization into the software implementation process to ensure that the software can grow with future business requirements.

Organizational Change Management

Organization change management (OCM) refers to managing the organizational shift from "current state" to "future state," involving people, process, and technology. Strategic consideration should be made regarding the approach for deploying new technologies (i.e. "Big Bang" versus a phased approach). A strategic focus should also be placed on the methods for supplying end-user training and obtaining user acceptance, along with involving key department stakeholders when implementing new technologies.

Review the Town's IT Service Portfolio and Identify Opportunities for Selective Sourcing

The Town should review its full portfolio of services provided to Town departments and develop an effective decision matrix to identify services or solutions that could be provided 'in-house' vs. a third party provider. In general, the Town should strive to retain high-value services in house (business analysts, report writers, etc.) and look to utilize selective sourcing for more commoditized services. The following visual depicts an example IT service portfolio:
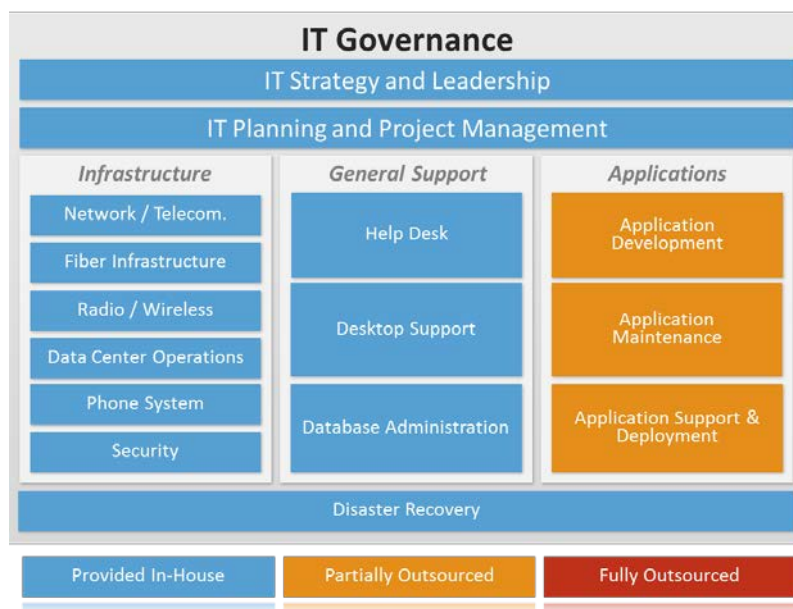
Selective sourcing is the practice of seeking resources or subcontracting outside of an organization for select parts of IT functions when it is appropriate, such as when a position becomes vacant or when a technology is up for replacement. Selective sourcing should not be confused with outsourcing, which is contracting outside of an organization for ALL of its functions.

A. **E-Mail.** E-mail is probably the most popular and most debated of the selective sourcing items. Because of the cost of e-mail and its importance in supporting critical business functions, many local governments are choosing to host e-mail with companies that specialize in providing email, such as Microsoft 365 or Google's Gmail service. When reviewing the costs of email, the Town would need to assess the total cost of ownership of the solution. Providing email service to Town users would require not only a single email server, but redundant servers, spam filters, antivirus servers, archiving systems, and a substantial amount of employee time to keep the system running and to perform maintenance. Many municipalities now consider this to be a commodity service that can easily be handled by companies that specialize in providing email to customers.

B. **Cloud First.** A Cloud First strategy seeks to host new applications in the "cloud" versus hosting them internally. Over time, a Cloud First strategy will reduce the technology footprint at the Town along with costs of maintaining and supporting the environments. Instead, costs would be shifted to a third party application service provider (ASP) or to the actual software company in cases where the solution offering is purely a web-based, multi-tenant architecture (i.e., single instance of the software but with numerous datasets and configurations). As the Town considers replacing or upgrading certain applications, the Cloud First strategy dictates that the procurement process considers ASP and multi-tenant solutions and relevant return on investment and other benefits of pursuing such a strategy.

C. **Town Constraints –** The Town's internet connection will need to be more robust if more services are being accessed over the internet and in the cloud. Additionally, staff considerations need to be recognized and need to be made part of any initiative that involves transferring of systems and servers that were once their responsibility to an outside vendor. Once the transition is complete, Town IT staff will need to be re-assigned to other duties which may require formal training.

D. **Local Providers for infrastructure and PC Support** – In today's IT environment, infrastructure, such as networks and servers, are considered to be a commodity that staff spend a good amount of time monitoring, improving, and expanding rather than serving users directly. The current trend in the industry is to outsource the more technical work of Information Technology so that resources can be freed up to interactively work with end-user departmental staff and enable transformation of their business operations into those that better use technology, while either keeping the number of staff constant. The Town is currently leveraging outside contractors for a variety of infrastructure related support and should look to strengthen those relationships where appropriate.

Service Level Agreements

A strategy should be created to address where and how the ongoing needs of the various departments can be met through a service level agreement (SLA). An SLA will establish key performance indicators (KPIs) and related targets. For example, responsiveness and time to resolution are KPIs that can be tracked and reported on a regular basis to departments and other stakeholders. A sample SLA or "*Partnership Agreement"* has been included in the IT Assessment Report, provided under separate cover.

Solution Optimization

The Solution Optimization strategy focuses on getting the most out of current solutions which the Town has already invested in versus looking to delve into new technologies. Analysis of the integration of

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existing systems should be a major focus of the Solution Optimization strategy. The Solution Optimization strategy is necessary given the Town's investment in and commitment to its current systems.

The Solution Optimization strategy should address the following:

1. Prioritizing "pain points" within the Town. Such pain points will be associated with specific business processes and their prioritization should be based on how closely they support the goals and objectives defined during the business planning process. The Project Portfolio Management process should be used to prioritize pain points.
2. Alignment of resources. A critical element of executing the Solution Optimization strategy is to identify resources within the Town who have functional knowledge relative to the specific Department they are working with.
3. Communication Planning. The user community must be re-engaged in a new process for optimizing the current systems in order to change perspectives, identified above, that have emerged during the past several years. This Solution Optimization strategy along with the accompanying tactical plan must be clearly articulated and near-term, "quick win" benefits must be demonstrated during the first year.

3.1.3   Goal #3: Enforce standards, policies and procedures

Establish base technology standards.

For key technology components (e.g., firewalls, switches, wireless infrastructure, backup systems, Windows update tools/process, operating systems, etc.) develop standards that can be adopted by all departments and enforced through IT governance. All technology purchases should be approved against IT standards in order to leverage purchasing power, reduce operating costs, and promote a uniform delivery of services across the Town. This will include office productivity suite for word processing, spreadsheets, presentations, etc.

Establish base technology related policies and procedures.

The lack of documented policies has prevented the enforcement of certain best practices such as password restrictions, storage management, etc. The Town should formalize, document, and enforce key policies. A sample list of potential policies and procedures is included as part of the IT Assessment under separate cover.

In addition, the creation of accurate job descriptions will create awareness of key responsibilities, provide accountability, and allow individuals to focus on strategic projects that can impact the future of the Town. The job descriptions should take into account the future role of Information Technology based on changes outlined in this Plan, including those indicated under Goal #2, Maximize Quality of Services initiative.

3.1.4   Goal #4: Adopt processes to move towards a paperless environment

Document Management

Document management refers to the technologies used to capture, manage, store, preserve, and deliver content and documents related to an organization and its processes. In laymen's terms, document management systems aim to reduce paper waste by maintaining virtual documents instead of hard-copy. As part of its document management strategy, the Town could opt to use virtual, content-centric workflow as the primary vehicle for current paper-driven processes.

Currently, the town is utilizing multiple systems for document management. In general, the Town should consider the following items as part of an upcoming document management system consolidation project:

- Adhere to standards in terms of workflow, indexing, document types, etc.
- Roll out the new system by department based on prioritization criteria that includes the expected ROI.

- Identify a strategy to archive historical records as part of an greater document management program

Permitting

This is a set of software modules that can greatly manage the efficiency of the permitting and inspections process and provide customers with the capability to execute permitting related transactions online. Overall, tracking the permit and inspections process within a central software tool will increase accuracy, efficiency and the ability to key stakeholders to access necessary permitting information. Reviewing the current permitting processes in detail and identifying a set of standard permitting process workflows will enable the Town to select a COTS permitting and inspections solution and will lead to improved functionality for staff and ultimately services for citizens.

Currently, the Town is managing Permitting and Inspections via a variety of standalone systems and manual/paper processes. In our experience, this leaves the town well behind other similar sized municipalities that selected and implemented more robust permitting and inspections functionality over the past decade. In the future, the Town should consider the following:

- Develop 'as-is' process maps for the current major permit application, inspection, issuance, and renewal workflows
- Develop a set of detailed functional requirements that meet the needs of the permitting end users and the Town's customers
- Release a Request for Proposal to select a town wide Permitting and Inspections Solution
- After selection, be open to changing legacy processes where necessary to match COTS that are designed with industry 'best practices' in mind

Mobility

This is a set of technologies that includes portable devices, networks (Wi-Fi and others) and applications that are designed to work on devices other than computers. Most familiar devices include smart phones and iPads as well as other devices that can use enterprise data without being constrained to a desktop computer. Almost all depend on cloud-based technologies.

Many people routinely use cloud technologies to store music, photographs and videos. We have seen a tremendous increase in the use of mobile technologies by clients' employees, including management and field personnel. A major component of the move toward mobile technologies has been the rapid adoption of iPads by the executive and managerial classes of employees. The ultimate goal of mobile technologies is to provide an information resource wherever and whenever it is needed or wanted.

The Town should evaluate mobility options as part of any new system acquisition or upgrade and factor the overall cost to acquire and maintain into its return on investment (ROI) analysis for the particular project. The mobility strategy at the Town will allow access to certain systems and information, such as Email, by certain devices. The strategy should address "bring your own device" (BYOD) concept which allows, under the direction of appropriate policies, the conditions under which employee owned devices can access information.

3.1.5 Goal #5: Move toward a 'Digital Government' Model

Business Intelligence

Business intelligence (BI) refers to the methods and technologies that gather, report, and analyze business data to facilitate intelligent business decision making. Several key department stakeholders within the Town expressed a need to have readily available, real-time business information to be able to intelligently and quickly make business decisions that will best serve the Town. Many BI tools exist that could aid the Town in achieving this goal, providing capabilities such as advanced report writing and querying, data mining, business process modeling, and performance metric tracking.

The Town's best course of action is to determine what business intelligence capabilities are resident in its existing Tyler MUNIS ERP system for starters. If adequate BI features are not resident in its ERP system, the Town should investigate either upgrading the reporting capability of the existing system or third party solutions that provide this capability. This may be the preferred course of action since it would allow multiple data sources to populate the BI solution in the future (e.g., ERP, ePermitting, Utility Billing, etc.)

Business intelligence can add value by being applied to the various business purposes, such as analytics, performance management, and reporting.

- **Analytics** – the quantitative analysis of business processes that provides the data to make smart, timely business decisions and to perform business knowledge discovery. Common practices include data mining, process mining, statistical analysis, predictive analytics, predictive modeling, business process modeling, complex event processing, and prescriptive analytics.
- **Performance Management** – establishes the hierarchal framework for performance metrics and benchmarks to track progress towards business goals and inform key business stakeholders.
- **Reporting** – the compiling of business information to serve the strategic management of a business. Common practices include data visualization, executive information systems, and online analytical processing (OLAP).

E-Government / M-Government

E-Government has a broad set of definitions but typically refers to information technologies used to improve government services as well as interactions with citizens, employees, businesses, and other government agencies. M-Government extends the benefits of e-Government to mobile platforms, further increasing the accessibility and availability of government services to constituents.

One of the major strategies relative to e-Government has nothing to do with technology; rather it focuses on establishing a more formal, well communicated governance structure relative to specific branding and content decisions. Many organizations struggle with the distinction between who is responsible for these elements – Communication/Marketing versus Information Technology – but it usually ends up in one or both of these areas. Implementation of the IT Governance strategy will help to ensure these responsibilities are clearly defined but more importantly, ensure their alignment with the overall business goals of the Town.

The e-Government strategy should be implemented in conjunction with its effort to redesign its existing website. The strategy should consider the Town's demographics, including adequate features for visitors, senior citizens, families, young, single people, etc. The e-Government strategy for the Town should have three parts: On-line Services, Information On-Demand, and Mobile Services.

ON-LINE SERVICES

The e-Government strategy will serve to improve the experience for citizens/customers in terms of access to service, navigation, consistent look and feel, and usability. Integration with "back office" applications will also be essential to ensure transactions are processed in accordance with user expectations.

There are a variety of services that can be made available on-line for local governments. Services available via the web should be accessible from a single "portal" such that users do not need to figure out which Department is responsible for what they are looking for. The following visual depicts the nature of 'e-government':
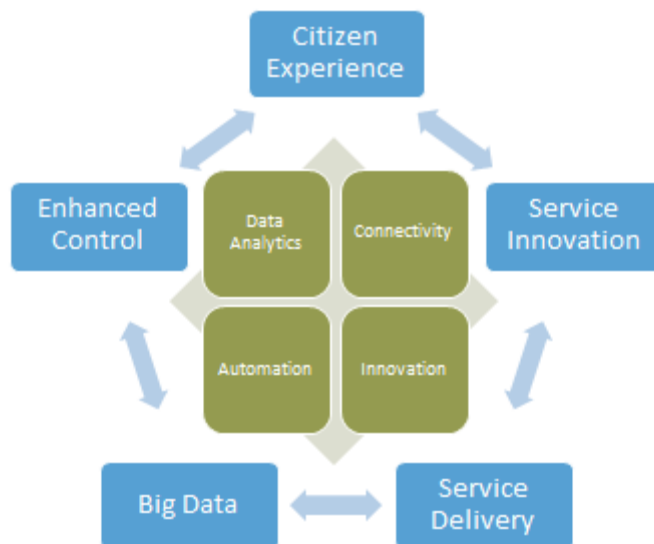
INFORMATION ON-DEMAND

For the Town, the e-Government strategy will focus on a specific set of information technologies which will enable a combination of both one-way (current state) and two-way communications. With the former, there is an exclusive level of control that the Town has in terms of published content that is openly available to the public. As such, one-way communications should focus on providing citizens/customers with real-time information they find useful and in their preferred format. Two-way communication should be available initially through closely moderated means with citizens and less so for employees, businesses and other government agencies.

There are four primary categories of content:

- **Static:** Another way of looking at 'static' content is as brochure-ware, or informational. This content will not change much (such as overview pages.) The Town should look to consolidate this content, simplify it down to key points. By including more imagery, this content can deliver more impact with fewer words.
- **Dynamic content:** Information that changes with a degree of frequency. News, events, external feeds, blogs, etc. These are all examples of dynamic content. The key for the Town is to monitor the 'freshness' of dynamic content, and make sure this information is featured prominently. Static content can easily appear stale and salesy. Dynamic content leaves an impression of innovation, hard work and versatility.
- **Social content:** Here, users primarily control the content. Although certain checks can be put in place to counteract the negative impact of social content, these techniques deflate its objective.
- **Multimedia:** Flash, video, audio, podcast, etc. are examples of multimedia content.

Emerging technologies which support on-demand communications are often referred to "Web 2.0" technologies. Web 2.0 can apply to all content categories noted above. Web 2.0 can be broadly defined under the concept of allowing users to pull information they need on-demand, as well as the facilitation of collaboration. Using Web 2.0 technologies, users can collect and/or share information; however, it is most convenient via a mobile device, email, personal portal and/or via the public site. Examples which should be strongly considered by the Town as it plans to redesign its website include:

- **RSS (Really Simple Syndication).** Provides users the ability to subscribe or 'pull' content from the Town's site into a format of their own.
- **Blog (contraction of the term "weblog").** A blog is a type of website usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video.
- **Forums.** Generally reserved for support areas, forums are an excellent way to build an online help library. Many Counties are challenged with the means to maintain and monitor a forum.
- **Twitter (www.twitter.com).** Twitter is an online service/community where users subscribe to particular feeds (sponsored by individuals or organizations) where subscribers are able to quickly post text-like statements for all subscribers in the group to view.
- **Social Bookmarking.** Another simple means of allowing users to not only make a particular page a favorite, but share that page with a larger community.
- **Facebook (www.facebook.com).** Facebook is a social networking site with millions of members; Facebook provides an immediate venue for connecting an organization with a broad audience.
- **YouTube (www.youtube.com).** YouTube is another popular social media service; YouTube has proven itself to be a simple and effective means to connect with a very large audience.

MOBILE SERVICES

The Town should look to ensure that its e-Government offerings are developed with mobility in mind. Computing technology is continuing to shift away from personal computers and toward mobile devices, including smart phones and tablets. The Town should develop a strategy for how this market shift toward mobility will be handled in regards to its citizen and constituent interactions.

As such, a future Town project to redesign its website and enhance the Town's social media presence should be developed with mobile services in mind. An m-Government strategy should be developed to include features such as those indicated for On-line Services, above. In addition, current initiatives related to mobile services should be aligned with the overall e-Government/m-Government strategies.

3.2   IT TACTICAL PLANNING

Tactical activities have been identified for the more complex of the strategic initiatives outlined above. The tactical items help to break down large tasks into more manageable ones for a successful implementation.

3.2.1 IT Governance Tactical Items

1. Finalize the Town's IT Governance Model. Obtain buy-in from stakeholders including Town Manager's office, elected officials and Department heads.
2. Formalize the IT Steering Committee and participation.
3. Establish a Governance Charter for the IT governance team which coincides with the overall IT Governance Model.
4. Formalize the IT Standards Committee and participation.
5. Establish a Standards Charter for the IT Standards Committee which coincides with the overall IT Governance Model.
6. Develop appropriate documentation (e.g., policies, procedures, standards, etc.) to formalize IT Governance.
7. Communicate expectations regarding IT Governance through the IT Communication Plan.
8. Create a link between the governance structure and the annual budget process. This will ensure that technology planning is conducted in an organized fashion
9. Establish a formal communication channel and process between all levels. This allows IT staff to provide feedback to management and is critical to the success of the IT Governance Model.

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10. Work with Information Technology Staff and Management to develop and recommend Town IT standards. For the areas that are deemed as core to the Town IT function, these may include usage, records retention, system architecture, remote access, security, etc.
11. Maintain the IT standards repository for the Town.
12. Develop and maintain IT standard deviation request process for items falling outside of an established standard.
13. Define Service-Level Agreements with Departments as established by Information Technology. Modify, as appropriate.
14. Modify IT governance team meetings/agendas to integrate the IT planning process with the business planning processes. This will help to facilitate the decision-making process in a manner that is consistent and clearly understood by all those involved.

3.2.2 Project Portfolio Management (PPM) Tactical Items

1. Establish Project Criteria/Definitions. Clearly establish criteria for the elements that define a formal project.
2. Finalize PPM Framework. Finalize the standard framework to prioritize all Town IT projects in order to generate a more complete and quantifiable analysis.
3. Establish Information Technology Project Management Office as having primary responsibility for maintaining the Project Portfolio Database and providing updates via an IT Communication Plan.
4. Develop a Project Portfolio Database.
5. Apply Prioritization Methodology to Existing Projects. Apply the framework and definition to the existing project backlog list within the Project Portfolio Database.
6. Establish Request/Approval Process and Communicate. Utilize the same project approval template for end users to formally recommend a project for approval. This should identify specific milestones. Each project request should support and be aligned with the business plans.
7. Integrate IT Planning with Business Planning. Establish a structure to integrate the IT planning process with the business planning processes within the departments. This will help to facilitate the process of making decisions in a manner that is consistent and understood.
8. Conclude on Priorities. Conclude on priorities, based on the Project Portfolio Management tactical plan. Provide direction to Information Technology Management on the implementation of technology.

3.2.3 IT Project Plan

Current IT Projects

Below is the list of current and future IT projects that were identified by the Town and Plante Moran during our engagement with the Town. Projects have been added in correlation with for the recommendations that were made in the IT Assessment Report. A preliminary priority and timing has been applied to each project that was identified; however, this list should be continuously updated by the Town using the project prioritization criteria outlined in this section and in connection with the IT Governance process. Ultimately, this listing should be added to the Master Project Portfolio Template, which is described in Appendix C.

Project	Priority	Timing	Cost*
1. Improvement of Surfside Wastewater Treatment Plant Network	Medium	2017-2018	$
2. Installation of New Switches	Medium	2016-2017	$
3. MUNIS Upgrade/Replacement	Medium	2018-2019	$$$$
4. Install Radius Wi-Fi at Visitor Services	Medium	2016-2017	$
5. Install Fiber - Wannacomet and Our Island Home	High	2017-2018	$$$$
6. Install VOIP Wannacomet, NRD, HR	Medium	2017-2018	$
7. Implementation of Permit Tracking (ePermitting) System	High	2016-2017	$$$$
8. Wireless WAN Testing Initiative	Medium	2017-2018	$
9. Archive and Backup Retention Periods	Medium	2016-2017	$
10. Guest WiFi Network Configuration Review	Medium	2016-2017	$
11. Symantec Upgrade	Medium	2016-2017	$
12. Installation of Barracuda Archiver	Medium	2016-2017	$$
13. Group Policy Development for Power Management of Desktops	Medium	2016-2017	$
14. Tyler Enhancement - Using PO's, not reqs	Medium	2018-2019	$
15. IT Assessment Project	Medium	Completed (2016)	$$
16. Establish remote Access to MUNIS for CPC	High	2018-2019	$
17. Improvement of Networking at Sheriff's Building	Medium	2017-2018	$$

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Project	Priority	Timing	Cost*
18. Utility Billing System Upgrade	High	2016-2017	$$$
19. SCADA Upgrade	High	2018-2019	$$$$
20. Website Upgrades and Social Media Expansion	Medium	Ongoing	$
21. Email system upgrades/collaboration tools	Medium	2017-2018	$$
22. Implementation of Point Click Care at Our Island Home	High	2016-2017	$$
23. Plan for Document management systems (Docstar and LaserFische)	Medium	2018-2019	$$$
24. Implementation of CRM System	Low	Long Term	$$$
25. Archiving of Historical Records	Medium	On-going	$$$
26. EarthChannel Video Upload Speed Problems	Medium	TBD	$
27. Server Replacements	Medium	TBD	$$
28. Wannacomet E-Mail Migration	Medium	TBD	$$
29. Brant Point Network & VOIP	Medium	TBD	$$
30. MUNIS HR Module	Medium	Long Term	$$$
31. Downtown Wi-Fi Hot Spot at Visitor Services	Medium	TBD	$$
32. Town Building Cabling	Medium	TBD	$$$
33. GIS / Vision GeoDatabases	Medium	TBD	$$$
34. Wannacomet New Building	Medium	TBD	$$$$
35. Chrome Evaluation	Low	2016-2017	$
36. Office 365	Medium	2017-2018	$$

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*Key:

$	Total project cost estimated at less than $10,000
$$	Total project cost estimated between $10,000 and $50,000
$$$	Total project cost estimated between $50,000 and $250,000
$$$$	Total project cost estimated greater than $250,000

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Project Prioritization Criteria

The following is a sample guide for quantitatively prioritizing the Town's individual technology projects as part of its overall Return on Investment (ROI) analysis going forward. All projects should be prioritized in connection with the IT Governance and Project Portfolio Management processes.

	Strategy/ Objective	Criteria	Scoring (Y/N)	Condition	Score
Urgency (110)	Mandated (50)	Federal, State or Town mandate?		Mandated (+50 pts.)	0
	Security/Compliance Risk (20)	Security/Compliance Implications - HIPAA, PCI		Priority (+20 pts.)	0
	Strategic Goal (14)	What is the alignment of this project with Town Strategic Goals?		**(Select best one only)**	
				Direct alignment with one or more Board of Selectman goals (+12 pts.)	0
				Direct alignment (+8 pts.)	0
				Indirect alignment (+4 pt.)	0
				No alignment (0 pts.)	0
	Required (12)	Is this project Required?		**(Select best one only)**	
				Required to sustain Operations (+12 pts.)	0
				Required to reduce risk (+8 pts.)	0
				Required to reduce cost (+4 pt.)	0
				Not Required (0 pts.)	0
	Flexibility (12)	Is the project timeline flexible?		**(Select best one only)**	
				Required in fewer than 12 months (+8 pts.)	0
				Required in fewer than 18 months (+4 pts.)	0
				Required within 2 years (+1 pt.)	0
				No Required Deadline (0 pts.)	0
	Need of System (12)	Is it an urgent need for the Town?		**(Select best one only)**	
				Urgent for Town (+8 pts.)	0

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	Strategy/ Objective	Criteria	Scoring (Y/N)	Condition	Score
				Pressing need of the Town (+4 pts.)	0
				Urgent for Department (+1 pts.)	0
				Pressing need for Department (0 pts.)	0
	Category Sub-Total				**0**
Impact (30)	Reach/support customer base (10)	What users will be impacted?		**(Select best one only)**	
				Internal and external? (+10 pts.)	0
				External only? (+7 pts.)	0
				Internal only? (+5 pts.)	0
				Single department only (+4 pts.)	0
	Increase effectiveness (10)	Does it improve ability of Town staff or their customer to do task?		**(Select best one only)**	
				Improvement for Town staff and customer (+10 pts.)	0
				Improvement for Town staff or customer (+6 pts.)	0
				No improvement for Town staff or customer (-2 pt.)	0
	Current State (10)	What is the state of the current system?		**(Select best one only)**	
				Completely inadequate / End of Life / New System (+10 pts.)	0
				Functioning, but close to end of life (+6 pts.)	0
				Functioning, but could be better (+3 pt.)	0
				System Upgrade (0 pts.)	0
	Category Sub-Total				**0**
Financial (20)	Staff or System Reduction (10)	What is the effect on systems reduction/consolidation?		**(Select best one only)**	
				Addresses unnecessary / likely redundancy (+10 pts.)	0
				Reduce Systems (+5 pt.)	0
				No Change Systems (+0 pts.)	0
				Additional systems needed for support (-4 pts.)	0
	Operational cost (10)			**(Select best one only)**	

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Strategy/ Objective	Criteria	Scoring (Y/N)	Condition	Score
	Is there a positive ROI?		Will pay for itself and generate revenue? (+10 pts.)	0
			Implemented to avoid cash expenditure (+5 pts.)	0
			No effect (0 pts.)	0
			Increase (-5)	0
Category Sub-Total				0
Totaled Priority Score				**0**

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3.3   IMPLEMENTATION

3.3.1   Plan Implementation Approach

To implement the contents of the assessment and technology plan, the following approach is recommended:

1. **Understanding of the Plan:** The plan should be reviewed in its entirety to gain an understanding of what is being presented and to elicit discussion and feedback on elements of the plan.
2. **Support for the Plan:** Within the plan, there are numerous recommendations that will change how technology is managed and administered within the Town. Support will be essential from the Town Manager, leadership of the Town including elected officials, and department heads.
3. **Establish a Governance Model:** Going forward, a number of the recommendations are dependent upon a formal IT governance structure in which different committees will have varying roles and responsibilities. This structure, including roles and responsibilities, needs to be defined, agreed to, and implemented.
4. **Prioritize Initiatives within the Plan:** Decisions on prioritizing those projects and initiatives to be implemented should be based on agreed-to project criteria.
5. **Obtain Funding for the Initiatives:** As part of the initial deployment of the plan and on an on-going basis, funding will need to be obtained to implement elements of the plan.
6. **Execute the Plan and Initiatives:** Once funding and approval for projects have been obtained, implementation of the plan components will occur.
7. **Maintain the Plan:** Continually review and update the plan through the IT Governance process.

3.3.2   Plan Maintenance

It is anticipated that the plan maintenance process will be initiated as an activity of the Information Technology Manager and will be the shared responsibility of the IT governance team to guide and direct the specific needs of the review that will likely include the following activities:

- Assess progress on current projects/ initiatives
- Assess progress toward the advancement on each of the IT Strategic Goals
- Assess measurable progress toward the achievement of specific IT areas
- Identify IT trends relevant to the plan
- Identify factors, both internal and external, that may impact the need to revise elements of the plan through interviews with select Town staff
- Update, as needed, priority strategies, technology goals, vision statement, and guiding principles based on environmental changes that have occurred
- Initiate an abbreviated end-user survey on an annual basis focused on specific areas of improvement required

3.3.3   Performance Metrics

The following factors have been identified as objectives that are critical to the successful implementation of the Information Technology Strategic Plan and should be incorporated into the balanced scorecard, including key performance indicators:

1. Future funding sources are identified and secured.
2. Town administration commitment and leadership to implementing the plan.
3. Department senior management commitment, leadership and support for projects.
4. Cross department cooperation and coordination regarding projects.
5. Ownership on the part of the business units when implementing new technologies and business applications.
6. Departmental participation in setting information technology direction.

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7. Strong leadership in the Information Technology Department as well as a clear vision for the future that is clearly communicated and understood by Town staff.
8. Compliance/adherence to information technology architecture and standards.
9. Managed expectations for information technology initiatives.
10. User satisfaction with results of information technology initiatives.
11. Education/training of information technology staff and departmental staff involved in the deployment and maintenance of information technology assets.
12. Achievement of service level agreement goals and objectives

Appendix A: IT Governance Model

The following Roles and Responsibilities Matrix further outlines the specific IT Governance authority:

	IT POLICIES & PROCEDURES	IT STANDARDS	ANNUAL TECHNOLOGY PLANNING	ANNUAL TECHNOLOGY BUDGETING	DEPARTMENTAL AND LINE OF BUSINESS PROJECTS	ENTERPRISE PROJECTS
Town Manager	• Approve recommended IT policies and procedures • Communicate IT procedures Town wide	• Approve recommended standards • Communicate standards Town wide	• Approve strategic technology plan	• Review and approve budgets and requests to the Board	• Authorize and support department level projects	• Authorize and support enterprise level projects
IT Governance Team	• Review and recommend IT procedures	• Approve IT standards	• Review and update, as needed, the strategic technology imperatives in terms of relevance and priority • Determine which projects require ROI study and/or needs assessment	• Approve ROI model • Review and approve project prioritization criteria and weighting • Review, rank and prioritize ad hoc committee, CIP and non-CIP project requests to the IT governance team	• Provide oversight to major projects • Charter line of business committees to oversee locally relevant projects	• Gives life to potential enterprise initiatives that may originate from multiple sources • Initiate subcommittee to evaluate enterprise initiative feasibility • Conduct periodic monitoring of enterprise projects

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	IT POLICIES & PROCEDURES	IT STANDARDS	ANNUAL TECHNOLOGY PLANNING	ANNUAL TECHNOLOGY BUDGETING	DEPARTMENTAL AND LINE OF BUSINESS PROJECTS	ENTERPRISE PROJECTS
Chief Information Officer	• Recommend policies and procedures to the IT governance team for approval	• Recommend IT standards to governance team for approval • Identify IT standards that need to be developed • Participate on IT governance team • Develop and maintain process for requested variances from standard • Develop and recommend Town IT standards to the governance team for review • Review and provide recommendations related to Town IT standards deviation requests • Maintain the IT standards repository for the Town	• Draft updates to the strategic plan • Consolidate IT project lists • Develop ROI for projects, when necessary	• Develop recommended IT budget • Develop and maintain the ROI model • Develop and maintain the project prioritization criteria and weightings	• Approval of all IT projects based on IT strategic plan and standards	• Approval of all IT projects based on IT strategic plan and standards

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	IT POLICIES & PROCEDURES	IT STANDARDS	ANNUAL TECHNOLOGY PLANNING	ANNUAL TECHNOLOGY BUDGETING	DEPARTMENTAL AND LINE OF BUSINESS PROJECTS	ENTERPRISE PROJECTS
Ad-Hoc Committee (Line of Business)	• Understand the relevance of developed IT policies and procedures to the technology standards function • As needed, develop IT procedures in areas deemed necessary by the IT Governance Team	• Understand the relevance of developed IT standards as it applies to the subcommittee's charge • Review deviation requests from IT standards and recommend to the IT Governance Team		• Develop ROI and budget requests for Line of Business and Enterprise Projects	• Identify Departmental and Line of Business Projects and articulate benefits • Provide strong leadership and support for approved projects	• May provide project oversight to multi-departmental projects
Department IT Liaison	• Understand the relevance of developed IT policies and procedures to their Line of Business (LOB) • Communication channel between Information Services and departments	• Understand the relevance of developed IT standards as it applies to their IT initiatives • Initiate requests to deviate	• Review and update, as needed, technology goals applicable to the LOB	• Review and rank departmental IT initiatives	• Often first line of support	• Often first line of support

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	IT POLICIES & PROCEDURES	IT STANDARDS	ANNUAL TECHNOLOGY PLANNING	ANNUAL TECHNOLOGY BUDGETING	DEPARTMENTAL AND LINE OF BUSINESS PROJECTS	ENTERPRISE PROJECTS
Information Technology Staff	• As needed, develop IT policies and procedures in areas deemed necessary by the CIO • Identify areas where IT procedures need to be developed • Participate in the development of IT procedures • Implement recommended and approved IT procedures	• Assist with the development and communication of IT standards for those areas that are deemed as core to the Town IT function • Initiate requests to deviate	• Provide input to Plan	• Work with departments in developing project ROIs • Provide staff capacity input to the Governance Team	• Coordinate with department staff or perform directly	• Support Town-wide Projects • Coordinate with Department staff

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Appendix B: Cost Benefit Analysis Overview

The goal of performing a technology cost benefit analysis is to determine whether the benefits, both quantitative and qualitative, outweigh the costs for implementing a technology project. In performing a cost benefit analysis, there are different financial analyses that can be calculated through quantification of the projects cost and benefit estimates. Some of the more prevalent metrics used by different organizations include:

- **Return on Investment (ROI):** Average recurring net benefit divided by the total capital outlay.
- **Payback Period:** The average length of time required to recover the cost of the investment.
- **Net Present Value (NPV):** The total net benefit (or cost) of the project expressed in current dollars.

2. Hard vs. Soft: Direct and Indirect Costs and Benefits

When quantifying the costs and benefits, consideration should be given to both "hard" and "soft" costs and benefits. For purposes of the cost benefit analysis, these terms are defined as follows:

A. **Hard Costs:** Those costs directly attributable to the project that will result in the direct outlay of money. Typically these are budgeted cost items.

B. **Soft Costs:** Those costs or use of resources directly attributable to the project that do NOT result in the direct outlay of money. Typically these are not budgeted items.

C. **Hard Benefits:** Those benefits directly attributable to the project that will result in direct savings or revenues and impact actual expenditures or revenues.

D. **Soft Benefits:** Those benefits or resource efficiencies directly attributable to the project that do not result in the direct saving of money or direct inflow of money.

3. Specific Examples and Types of Costs and Benefits

Each technology project will have its own costs and benefits, unique to that specific project. No two projects will have the same costs and benefits. There are however, various types of costs and types of benefits that may be common between various projects. Each project should be analyzed on its merits. Some considerations may include:

Hard Costs

1) **Technology / Vendor Costs**: All project implementation costs paid to a technology vendor(s), including:

   a) Direct Technology Costs, initial investment including hardware, software, licensing, etc.

   b) Services Costs, including initial and recurring design, installation, configuration, training, data conversion, vendor project management, reporting, product modification or customization, technology integration and interfacing, initial project training, etc.

2) **Increased Internal Staffing**: Costs paid to hire additional internal staff (e.g. project team backfill staffing during project implementation *or* staffing for maintenance and support of

the technology once the project has been fully deployed). Also, staff overtime costs or staff rewards attributed to the project.

3) **Related Infrastructure Improvements:** Any necessary infrastructure improvements that may have to be made in conjunction with the project to make the project successful

4) **Ongoing Training Costs:** Anticipated future training costs for existing or new staff.

5) **Project Related Travel Costs**

6) **Other Miscellaneous Hard Costs**

Soft Costs

1) **Internal Project Staffing Costs**: Costs associated with internal staff time involved in the implementation of the technology project, such as:
   a) Project "End user" staff time associated with project
   b) Internal IT staff time associated with the project
   c) Project Management
   d) Change Management

2) **Documentation,** both technical documentation and procedural documentation.

3) **Project Workspace**, such as establishing a training area.

4) **Project Contingency:** Based on the comfort level with the identification of project costs, consideration should be given to whether to include a project contingency to account for unanticipated requirements which may arise during the course of project deployment. Project contingencies are often estimated as an additional percentage of identified project costs.

5) **Other Miscellaneous Opportunity or Soft Costs**

Hard Benefits

1) **Reduction / Elimination of Current Costs**: Benefits associated with a reduction to current technology, including:

   a) Consolidation / replacement of existing systems
   b) Reduction in dedicated IT staff
   c) Reduction in outside contracts for maintenance or support
   d) Elimination of document or storage costs
   e) Other direct savings

2) **Revenue Enhancement Opportunities**:   Consideration should be given to whether or not there is a potential to generate additional revenue through the deployment of a technology project by providing enhanced service levels or access to information. This may include potential:

   a) Tariffs – such as 911 surcharges
   b) User Fees – land record fees, convenience fees, etc.

3) **Process reengineering:** Typically end user savings that can be budgeted, attributable to technology enabled productivity gains.

4) **Other Budgeted or Quantifiable Benefits**

Soft Benefits

1) **Improvements to Staff Efficiency:** Benefit associated with reduction of a staff person's time performing a particular function based on the deployment of the technology project, with the assumption that staff efficiency will allow for reallocation of staff time to other more value added activities. Examples may include:

   a) Elimination of duplicate effort and manual tasks
   b) Direct entry / self-service / appropriate, secured access to information
   c) Cost avoidance
   d) Better Resource Control:
      i) Centralization of functions, to gain efficiencies of process and economies of scale.
      ii) Better use of high cost resources, such as enabling management staff to delegate non-value added activities to lower cost staff.

2) **Enhanced Decision Making:** In many cases users will identify improved information access as a key to enabling better quality decisions.

3) **Improved Data Integrity / Quality / Security:** Benefits associated with mitigating or minimizing security concerns or data quality issues.

4) **Enhanced Constituent Satisfaction:** May include a broad spectrum of constituent benefits such as speed of services, access to information, self-service options, etc.

5) **Enhanced Service Effectiveness:** May include a broad spectrum of staff benefits such as ability to reengineer services, staff safety (particularly in the public safety areas), staff self-service options, etc.

6) **Other Soft Benefits**

4. **Additional Cost / Benefit Considerations:**

In evaluating the specific hard and soft costs and benefits for a particular project, the following concepts should be considered:

a. **Stakeholder Input:** Look for grass roots input and feedback on costs and benefits. Often, the direct stakeholders can not only assist with identifying types of costs and benefits, but frequently can provide input that will assist with quantifying those costs or benefits.

b. **Quantify Town-wide, Not Departmentally:** Where possible, look to quantify costs and benefits across the Town. Many enterprise applications provide costs and benefits to multiple departments.

c. **Estimates:** Estimates are perfectly appropriate for a cost benefit analysis and should be considered just that, estimates. Estimates can always be challenged and will vary based on the individual doing the estimating. Estimates for hard costs and benefits may be comparatively easier to establish as they are more often based on empirical data. Soft cost and benefit estimates are arguably, more challenging. For technology purchases, vendors often can assist with identifying benefits, but effort should be taken to quantify these benefits as an internal effort. To estimate internal staff efficiencies, look, where possible to quantify sample savings on a micro level (transaction basis) and then extrapolate.

d. **Unquantifiable Costs and Benefits:** Some soft costs and soft benefits are unable to be reasonably quantified. Examples may include risk reduction, opportunity cost, value to the constituent, quality improvement, etc. For such items, they should be understood, documented, and considered in conjunction with the quantifiable cost benefit calculations and metrics.

e. **Phase In of Benefits:** Potential savings projections should be estimated considering their long term potential benefit. It is not always likely, however that all of the potential savings will be completely and fully realized. Additionally, with technology projects the potential savings will likely be less initially as the system is implemented; however they may increase over time, as users accept the implications of the technology project and implement re-designed work

processes to take advantage of new system capabilities. As such, it may be appropriate to phase in the benefits over time, by applying a percentage to the benefit estimates.

f. **Grouping of Related Projects:** Circumstances may be that a series of related projects performed together or over time may yield a combined positive cost benefit. Where appropriate, consider combining multiple related projects defined separately in other technology planning efforts into one for cost benefit purposes. Then, consider the implementation schedule and phasing when projecting costs and benefits.

g. **Implementation Schedule**: Consider the timing of deployment of the project costs and benefits.

h. **Recurring Costs**: Include any necessary maintenance and support costs, such as licensing, maintenance agreements, cost implications for upgrades to COTS solutions, etc. that would result to retain the benefits of the project over time.

i. **Replacement**: Where necessary, build in a hardware replacement cycle (hardware depreciation set aside) for any expected hardware upgrades.

j. **Process Redesign**: It is recommended to undergo process redesign / reengineering in conjunction with technology project implementation, as appropriate, to maximize the realization of benefits of the technology project.

k. **Use Loaded Staff Costs:** Any hard or soft costs or benefits that reflect staff utilization or reductions should use the fully loaded employee cost, including salaries, benefits, and any related fringes. Often, organizations will determine an average annual employee cost used for all cost benefit efforts.

l. **Inflation:** Acknowledge reasonable inflation increases over time in cost benefit analysis and apply these inflation increases to ongoing costs.

Appendix C: Master Project Portfolio Template Description

As the key below shows, each technology project initiative, whether approved or in the planning stages, shares the same consistent attributes in the Master Project Portfolio Template. Many of these attributes, such as high level cost estimates and timing, are meant to place projects in a category for planning purposes. Please note that the final Master Project Portfolio may not need to contain all of the following items, but the following table should provide a starting point for the project portfolio management process.

Column	Value	Description
Project #	####	Number assigned by Information Technology to identify a specific project
Request	text	Short description of project or project title
Classification	Departmental	The project primarily benefits a specific department
	Enterprise	The project directly benefits multiple departments or all departments
	IT Operational	The project is for IT infrastructure or other 'back end' IT operations
Requesting Customer	name	Name of person who has made this request.
Urgency	###	Overall urgency score based on completion of evaluation criteria
Alignment With IT Strategic Plan	1	Project does not align with the current IT Strategic Plan
	2	Project has indirect and partial alignment with the IT Strategic Plan
	3	Project has direct but not complete alignment with the IT Strategic Plan
	4	Project is directly and completely aligned with the IT Strategic Plan
Risk	1	Project has no or only risk factors are not going to affect the scope and schedule
	2	Project has risk factors which may affect the scope and schedule of the project but the ability to mitigate and manage the risk appears reasonable
	3	Project has risk factors which may affect the scope and schedule of the project and the ability to mitigate those risks is uncertain
Description/Goal	text	Paragraph (2-3 sentences) describing the project scope and the primary goal(s)
Timing	I = Immediate	Anticipate project will become Active within 90 days
	M = Medium	Anticipate project will become Active during current fiscal year
	N = Near	Anticipate project will become Active during next fiscal year
	L = Long	Future Project, time frame unknown but not within current or next fiscal year
Cost	$	Total project cost estimated at less than $10,0000
	$$	Total project cost estimated between $10,000 and $50,000

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Column	Value	Description
	$$$	Total project cost estimated between $50,000 and $250,000
	$$$$	Total project cost estimated greater than $250,000
Department Priority	High	Department has indicated that this project has significant benefits for them, benefit has been calculated and it is positive
	Medium	Department has indicated that this project has benefits, but the benefit has not been or cannot be determined
	Low	Department has indicated this project is needed but is not as urgent as other requests and should be addressed subsequent to Medium and High benefit projects
Additional Resources - initial	High	High level of resources
	Moderate-High	Moderate-High level of resources
	Moderate	Moderate level of resources
	Low-Moderate	Low-Moderate level of resources
	Low	Low level of resources
Additional Resources - ongoing	High	High level of resources
	Moderate-High	Moderate-High level of resources
	Moderate	Moderate level of resources
	Low-Moderate	Low-Moderate level of resources
	Low	Low level of resources