



Information Technology Master Plan

Prepared by:



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1 - Introduction

1.1 - Scope and Objectives

This document, entitled Information Technology Master Plan (ITMP), was prepared for the Zone 7 Water Agency (Agency or Zone 7) by NexLevel Information Technology, Inc. (NexLevel), to present a summary of findings and recommendations which will provide improvement in Zone 7's technology service delivery. The ITMP also identifies longer-term projects that the Agency could implement in order to better support technology while providing improved services to its customers.

The ITMP will enable Zone 7 to more effectively allocate its information technology resources and obtain greater benefits for its investments in information technology. The plan does not attempt to predict the future; but rather, enable the Agency to respond to new and/or changed requirements.

In general, strategic planning provides the basis for organizations to proactively change their information technology environment (including processes, organization, people, and infrastructure), to remediate service delivery issues, to obtain greater benefits for the investments being made in information technology, and to improve an organization's ability to more effectively respond to future requirements.

The question then, is not whether Zone 7 needs to change how it governs, manages, delivers, and uses information technology services, but rather, how this change should be implemented. The ITMP answers this question by providing:

- A collaborative framework for the identification, definition, and prioritization of information technology projects that reflect the Agency's needs, priorities, and resources

- A baseline strategy for the implementation of the information technology projects that can be maintained and modified by the Agency as priorities and resources change.

Terminology

To avoid confusion, concepts and observations in this report regarding the use of information technology in general are spelled out ("information technology") or abbreviated as "IT", while "IT Organization" is used for references to the Agency's technology service provider (Lanlogic) or other technology support functions within Zone 7.

1.2 - Document Organization and Contents

The document is organized as follows:

- **Introduction (this section):** Provides information regarding the scope and objectives of the project, the organization and contents of this report, and the methodology used to develop the ITMP
- **Current Technology Environment:** Provides information that was developed in the course of the assessment phase of the project regarding how the Agency governs, manages, and delivers information technology services
- **Information Technology Master Plan:** Provides a description of technology trends that are useful in evaluating future projects, a discussion on ITMP enablers that should be addressed for successful plan implementation, and a strategic project roadmap including information regarding the relative business value, level of effort, level of risk, and cost for each of the projects
- **Conclusion:** Provides perspectives on the establishment of a foundation to enable Zone 7 to obtain improved returns

for its investment in technology as well as information to facilitate the Agency’s future success in planning, governing, and implementing technology projects

- **Appendix:** Provides a list of ITMP projects with project sponsor, a reference to the genesis of each project, and a description of the project.

1.3 - Project Methodology

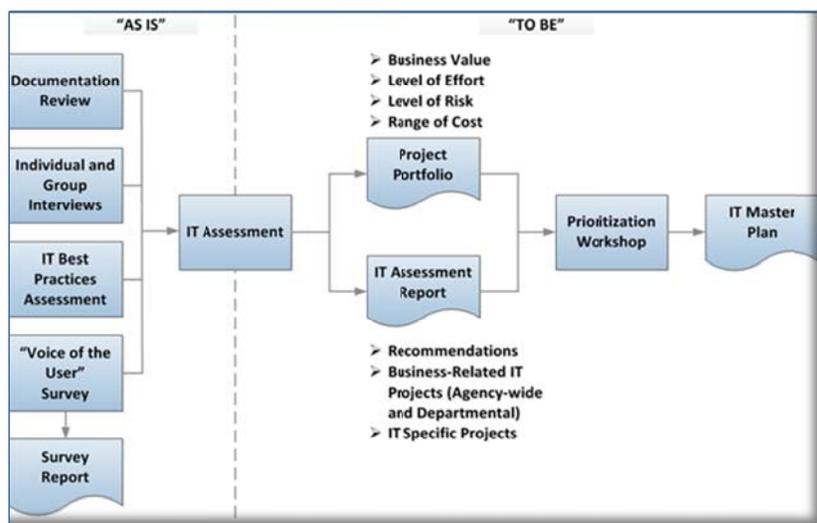


Figure 1 – “Listen, Plan, Deliver Methodology”

Figure 1 depicts the methodology used by NexLevel to develop the ITMP for Zone 7. NexLevel’s “Listen, Plan, Deliver” methodology is composed of three phases:

- **Initiate Phase** – During which NexLevel met with the Agency’s Project Steering Committee to review and confirm the project schedule and to identify relevant documents that were reviewed in the course of the project

- **Analyze Phase** – During which NexLevel performed an analysis of how the Agency governs and manages information technology, how information technology services are delivered, and how they are used, including an assessment of the degree to which Zone 7 conforms to information technology best practices. The assessment included an analysis of the gap between the Agency’s current conformance with information technology best practices, average conformance for similar public agencies, and the recommended target for conformance

The assessment provided realistic and achievable recommendations for the Agency with the objectives of enabling it to obtain greater value for its investment in information technology, and/or realize improvements in the governance of information technology, and the delivery of information technology services

- **Strategize** – During which NexLevel worked with Zone 7 to develop a project “portfolio,” a prioritized list of information technology projects that was reviewed by Agency decision-makers and stakeholders in the Project Prioritization Workshop. The results of the workshop provided the basis for the development of this ITMP.

2 - Current Technology Environment

2.1 – IT Assessment Steps

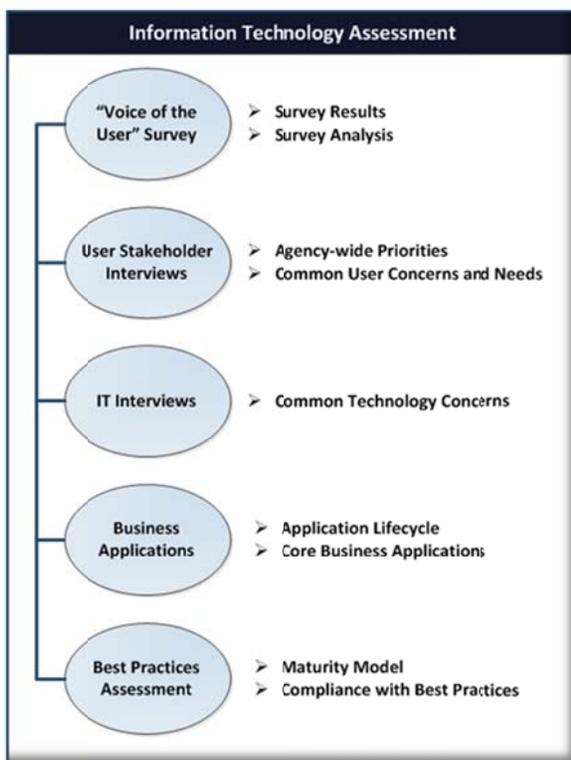


Figure 2 – Scope of Information Technology Assessment

As depicted in Figure 2, Scope of Information Technology Assessment, NexLevel performed a review of how the Agency presently governs, manages, delivers, and uses information technology services. The key findings from the Information Technology Assessment Report, August 21, 2015, are provided below.

2.2 - User Survey

A Technology User Survey was conducted between May 12, 2015 and May 29, 2015. Of the approximately 107 full-time Zone 7 employees sent the survey, 62 employees participated - a 57.9% response rate.

The survey responses were plotted on three points of significance:

- **“Zone 7”** - Percentage satisfied. This value was calculated by combining the “Very Satisfied” and “Satisfied” ratings and dividing by the total number of survey respondents, less “No Opinion”
- **“Client Average”** - The average percentage score for a similar question for all surveys conducted by NexLevel within public sector agencies
- **“Best Practice”** - The percentage for best practice compliance based on NexLevel’s experience.

Table 1, Summary of Key Service Metrics, provides information regarding how respondents rated technology services provided by Lanlogic to ten key survey questions. For each question, NexLevel has provided a status indicator that indicates whether Zone 7’s rating exceeds the best practice standard and the client average (🟢), is (in NexLevel’s assessment) equal to the best practice standard (🟡), or is less than the best practice standard (🔴).

Table 1 – Summary of Key Service Metrics

Status	Survey Question	Percent Satisfied		Best Practice
		Zone 7	Client Average	
	Understanding of Zone 7's business objectives	100%	77%	75%
	Understanding of your dept. business processes	92%	72%	75%
	Planning technology projects	85%	61%	80%
	Management of technology projects	87%	67%	75%
	Time to respond to your request for service	89%	81%	85%
	Time it takes to address and solve/correct your problem	82%	78%	80%
	Follow-up on service provided	82%	71%	75%
	Network availability and reliability	96%	75%	85%
	Communications on service, outages and maintenance	94%	78%	80%
	Computer programs meeting your business needs	93%	71%	75%

A review of these metrics finds that:

- Overall, survey respondents rated their satisfaction with the services provided by Lanlogic, at a higher level (greater than 5%) than the best-practice standard in eight of the ten questions
- In the two questions where survey respondents rated their satisfaction with the services provided by Lanlogic at a level generally consistent with the best practices standard (less than 5%), Lanlogic nonetheless scored higher than the client average for prior surveys conducted by NexLevel.

2.3 - User Stakeholder Interviews

In the course of the development of the IT Assessment Report, NexLevel conducted face-to-face interviews with a range of Zone 7 executives, managers, and staff including;

- The General Manager and Assistant General Manager for Engineering
- Engineering
- Operations
- Maintenance
- Administrative Services (Finance and HR)
- Integrated Planning
- Users of Specialty Systems

Issues and requirements identified in the course of these interviews included:

- Users in general are still uncertain as to the Agency's overall direction, objectives, and priorities for information technology
- The division of responsibility between Zone 7 and Lanlogic is not clearly defined, nor are service metrics specified in the agreement with Lanlogic
- Agency-wide information and document sharing is being impeded by the siloed nature of the applications as well as the use of different document organization schemes
- Although Zone 7 is implementing LaserFiche (an enterprise content and document management system) there is no detailed, overall plan (including resource needs, change

management, risk management, etc.) for its implementation and continued administration

- The ability to obtain access to plans, specifications, easements, and work orders from the field is becoming increasingly important to Agency users and there is great interest in obtaining Geographic Information System (GIS)-enabled mobile devices
- Although Zone 7 is making increased use of GIS, the Agency does not have a qualified GIS Analyst within the organization who is needed to oversee the creation of the layers in GIS, ensure the use of a consistent database structure, and work on integration with County and other utility GIS systems, etc.

2.4 – Technology Service Provider Interview

NexLevel met with Lanlogic which has been the Agency’s external IT service provider since 2001. Issues and requirements identified in the course of that interviews included:

- The contract between the Agency and Lanlogic does not have a specific statement of work but provides for a contracted number of hours of support that Lanlogic applies to various tasks at the Agency’s direction or with the Agency’s concurrence based on Lanlogic’s recommendations
- Lanlogic has a five-person Help Desk and two engineers who are familiar with the Agency’s environment
- Contractual and financial matters are handled by the Agency’s Finance Department and technology direction (including feedback on Agency satisfaction with the services being delivered) is provided by the Agency’s IT Committee

- The Agency retains ownership of the servers, etc., and although Lanlogic may recommend that equipment be upgraded or replaced, the decision to do so rests with the Agency
- Lanlogic’s perception of current technology needs include the replacement of the tape drive as well as a decision regarding its long-term strategy for backing up and archiving data.

2.5 - Core Business Applications

The Agency has a small portfolio of core business applications. A business application is considered to be “core” if it would be very difficult, if not impossible, for the users to perform their work without it. These are listed below in Table 2, Core Business Applications, along with the business functions that each performs, and a recommended disposition for each.

Table 2 – Core Business Applications

Application	Business Functions	ITMP Status
NewWorld (Logos)	G/L, A/R, A/P, and Budget	Retain/Enhance
PeopleSoft (County)	G/L, A/R, A/P, Payroll, Pos. Ctl.	Retain
TabWare (CMMS)	Asset Management	Retain
ESRI (GIS)	Geospatial Info. Mgt.	Retain/Enhance
LaserFiche	Document Management	Retain/Enhance
WonderWare	SCADA	Retain

2.6 - Best Practices Assessment and Gap Analysis

NexLevel uses a comprehensive list of best practices that are categorized into six separate dimensions to evaluate the Agency’s compliance with best practices. The dimensions are separated into two categories and include:

- Shared Ownership: Those dimensions where the IT organization shares ownership for IT best practices conformance with Agency management and the user community, including:
 - Technology Governance – Practices related to the Agency-wide direction regarding the use of information technology, the leadership and reporting structure of the IT organization, degree of management overview, and the tracking of the delivery of technology services
 - Service Delivery – Practices related to coordinating the processes involved in providing customer support including training, help desk, and service delivery management, and the establishment of service level agreements (SLAs) and tracking of conformance with them
 - Business Technology Applications – Practices related to the management and support of the application systems supporting business operations.
- IT Ownership: Those dimensions where the IT organization is primarily responsible for best practices conformance, including:
 - Infrastructure – Practices related to the acquisition, utilization, and maintenance of equipment (such as servers and storage devices), operating systems, support software, and network services

- Security – Practices related to the effective use of policies and standards, user conduct, software tools (filtering, monitoring, etc.), and audits to validate that material and software resources are used only for their intended purposes
- Administration – Practices related to the management of technology in terms of budgets, maintenance agreements, software licenses, and the development and maintenance of current and accurate documentation on all technology activities.

NexLevel developed an assessment of the degree to which Zone 7 conforms to the best practices in each of these dimensions based on the information developed in the course of the user interviews and based on a best practices self-assessment completed by Agency personnel.

Table 3, Comparative Conformance to IT Best Practices, provides an analysis of Zone 7’s conformance to information technology best practices.

Table 3 – Comparative Conformance to IT Best Practices

IT Best Practice Dimension	Zone 7
Agency-wide Ownership	
Technology Governance	23%
Service Delivery	50%
Business Technology Applications	23%
IT Ownership	
Infrastructure	43%
Security	60%
Administration	43%
*** TOTAL:	42%

As demonstrated in Table 4 – Comparisons to California Districts, Zone 7 compliance with best practices is similar to other regional districts which have recently contracted technology assessments with NexLevel.

Table 4 – Comparison to California Districts

IT Best Practice Dimension	Zone 7	District Avg.
Agency-wide Ownership		
Technology Governance	23%	42%
Service Delivery	50%	51%
Business Applications	23%	44%
IT Ownership		
Infrastructure	43%	59%
Security	60%	58%
Administration	43%	49%
*** TOTAL:	42%	49%

As can be seen, Zone 7 is slightly below the overall best practices conformance average of other special districts (42% to 49%).

The results are somewhat mixed for the other best practice dimensions. While the Agency scored above average of very similar to the averages for service delivery, security and administration, it did not score as well in the areas of technology governance, business applications, and infrastructure.

The Agency’s best practice conformance results are then plotted by dimension and level of organization maturity in Figure 3, IT Best Practices Conformance.

Each of the rings in Figure 3 represents a level of best practice conformance with:

- The outer most (red) ring representing the lowest level of conformity to IT best practices (less than 20%)
- The orange ring representing a level of conformance to IT best practices that is typical of reactive organizations (21% to 50%)
- The tan ring representing a level of conformance to IT best practices that is typical of proactive organizations (51% to 80%)
- The green rings at the core of the diagram representing the highest degree of conformance to IT best practices (greater than 80%).

The width of the bands is proportional, with the bands representing the Reactive and Proactive levels being the widest since they cumulatively represent a range of 60% conformance to IT best practices. Most public sector organizations fall somewhere within this range of conformance to IT best practices.

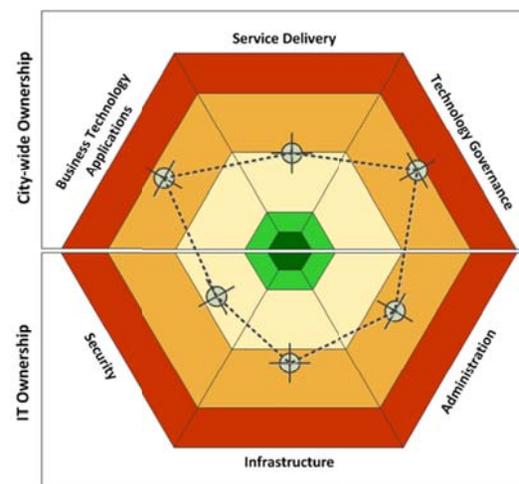


Figure 3 – IT Best Practices Conformance

NexLevel has plotted the results of the assessment for each of the best practice dimensions within the rings (the gray target points) and then connected them together to provide an overall picture of the Agency’s conformance to the IT best practices.

The Agency’s overall conformance to IT best practices is within the Reactive Level of the maturity model in four of the six dimensions (Technology Governance, Business Technology Applications, Infrastructure, and Administration), one on the boundary between the Reactive and Proactive levels for Service Delivery, and one within the lower tier of the Proactive Level for Security.

Figure 4, Gap Analysis, depicts the gaps between:

- (a) NexLevel’s assessment of the Agency’s present level of IT best practices conformance (42%)
- (b) The typical level of IT best practices conformance, which is generally around 50%
- (c) A target level of IT best practices conformance (approximately 65%) that represents a reasonable level of return on investment (ROI) for the Agency’s expenditures for information technology.

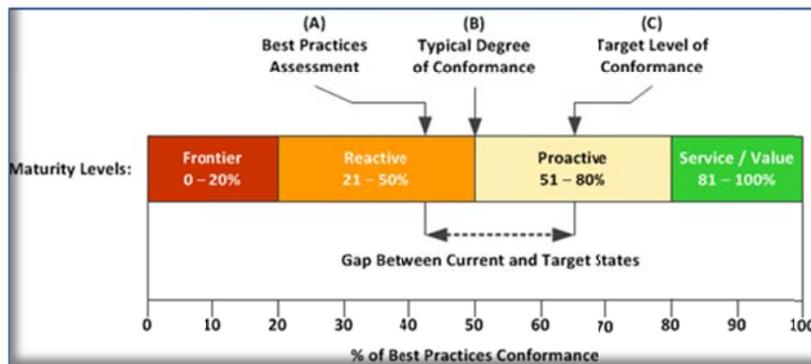


Figure 4 – Gap Analysis

2.7 - IT Assessment Recommendations

The IT Assessment Report provided a series of recommendations for the Agency to enable it to better govern, manage, and deliver information technology services. These are briefly described below:

- *The Agency should adopt a revised approach for the governance of information technology:* NexLevel recommended that the Agency adopt a formal approach to information technology governance to ensure that information technology priorities are aligned with Zone 7’s business goals and priorities. In addition, NexLevel recommended that the Agency create an IT Manager position that would report to an Assistant General Manager
- *The Agency should adopt a more comprehensive approach to the sourcing and management of IT services:* NexLevel recommended that Zone 7 develop a more comprehensive agreement for the sourcing of IT services that clearly defines the services to be provided including expected service levels and the respective responsibilities of the Agency and the service provider
- *The Agency should adopt a more comprehensive approach to business continuity, disaster recovery, and cybersecurity:* NexLevel recommended that Zone 7 and its external IT service provider develop a formal Business Impact Analysis and Business Continuity Plan, create an Information Technology Disaster Recovery Plan, periodically exercise the plan to validate that the plan works as intended, contract with an independent, certified, firm to conduct an external network vulnerability test to, and develop a security plan to provide a continuing approach to security management including the development of plans to detect and respond to security breaches

- *The Agency should develop a plan for the use of cloud and mobile technology:* NexLevel recommended that Zone 7 develop a cloud strategy that identifies services and applications that could potentially be moved to the cloud and the costs and benefits involved. In addition, NexLevel recommended Zone 7 develop a strategy and policy for the use of mobile technology including the deployment of a mobile device management tool
- *The Agency should develop a GIS Roadmap:* NexLevel recommended that Zone 7 develop a roadmap for the use, maintenance, and expansion of GIS software and allocate a dedicated Agency-based resource for GIS management
- *The Agency should develop a framework for document management and a formal plan for the implementation of LaserFiche:* NexLevel recommended the development of a document management framework that identifies how the Agency is going to store, index, manage and retrieve documents, the integration between LaserFiche and other applications including New World, and how the Agency intends to take full advantage of the functionality of the product including document capture and imaging, document storage and archival, document retrieval, redaction, and distribution, workflow automation, and mobile access. In addition, NexLevel recommended the Agency develop a project charter for the implementation of LaserFiche, create a steering committee, and develop a project schedule and risk management plan for the project
- *The Agency should develop a plan for the adoption of IT best practices:* NexLevel recommended the Agency work with its external IT service provider to develop a list of documentation that should be developed and then allocate resources to develop that documentation, implement

change and configuration management processes, develop a technology refreshment plan, and create a plan for continuing application training.

It should be noted that conformance with IT best practices does not guarantee the effective delivery of IT services; nonetheless the implementation of the recommendations will provide the Agency with a framework for progressively closing the gap in IT best practices conformance and for improving the delivery of technology services to user departments.

2.8 - SWOT Analysis

The changes in information technology and how information is used have been profound. Within a relatively short timeframe, developments including reliance on the Internet, mobile computing, mobile applications, etc., have transformed information technology from a back-office productivity tool to a strategic enabler for the delivery of information and services. This significant shift influences the assessment of the strengths, weaknesses, opportunities, and threats facing Zone 7.

Figure 5, SWOT Analysis, is a method for analyzing technology delivery. In this model, the upper sections of the chart are tactical and look at the strengths and weaknesses of the technology organization; while the lower section of the chart identify the opportunities and threats facing the Agency regarding its use of information technology.

Factors that impact IT management and service delivery	
Tactical	Strengths <ul style="list-style-type: none"> ➤ Good job of supporting desktop and network infrastructure ➤ Good approach to basic network security ➤ Generally proactive approach to user satisfaction ➤ Good core applications
	Weaknesses <ul style="list-style-type: none"> ➤ No single voice or vision for IT ➤ Responsibility for IT split across multiple organizations and not well defined ➤ Lack of service level measures and management ➤ Lack of formal processes for tactical management of IT
Factors that impact IT governance and strategy	
Strategic	Opportunities <ul style="list-style-type: none"> ➤ Improve ROI for IT expenditures through the implementation of IT governance and other IT best practices ➤ Align IT priorities and resources with agency-wide priorities and objectives ➤ Better manage end-user expectations for technology services
	Threats <ul style="list-style-type: none"> ➤ Cybersecurity ➤ Lack of preparation for business continuity and disaster recovery ➤ Increased cost of ownership for IT ➤ Siloed application environment inhibits information sharing, support, and security

Figure 5 – SWOT Analysis

As a result, the SWOT Analysis considers both strategic factors (that impact how organizations govern information technology and set strategic directions) and tactical factors (that relate to information technology management and service delivery). Tactically, the analysis considers the strengths and weaknesses that affect the ability of an organization to manage and use IT; strategically, the analysis looks at the opportunities and threats that affect an organizations ability to continually derive benefits from information technology and to manage its total cost of ownership (TCO) for IT.

Looking at Zone 7 in this context and model:

- IT management and service delivery:
 - The Agency’s strengths include good core applications as well as a generally satisfactory, although limited, approach to the delivery of IT services. Lanlogic

supports the Agency’s servers, network, and desktops and is attentive to customer service and satisfaction. Lanlogic works with the Agency to periodically refresh technology and to address limited procedures and policies needed to ensure the effective and secure use of information technology

- The factors inhibiting the Agency from making the fullest possible use of information technology and obtaining the information technology services that it needs include the absence of a single vision and voice for information technology in the organization, the absence of strong contract with its IT service provider that clearly defines the scope of services to be provided and the expected service levels, and the bifurcated IT support model that includes the County of Alameda, Agency staff, Lanlogic, and other service providers.

- IT governance and strategy:
 - From a strategic standpoint the absence of comprehensive procedures for business continuity and disaster recovery and the Agency’s highly siloed application environment do not provide the basis for a sustainable and agile information technology environment
 - Balanced against this, assuming that the Agency is committed to the continuing adoption of IT best practices, the Agency is positioned to leverage its existing technology investments and obtain greater benefits from its use of technology, particularly with respect to the productivity capabilities that are can be obtained with the Agency’s new document management and existing finance systems.

3 – Information Technology Master Plan

3.1 – Introduction

Change is a constant concern for public sector executives who must often respond to increased public expectations and new mandates with limited resources and information technology environments that are not agile. Without a strategic plan to manage and respond to change, organizations tend to become reactive rather than proactive and, as a result, obtain reduced benefits for their investments in information technology. Strategic planning enables organizations to find a balance between immediate and long-term needs. It follows that the process for the development of a strategic plan needs to take the same considerations into account.

3.2 - Plan Development

NexLevel is committed to the concept that information technology needs and priorities should be aligned with business needs and priorities. While there are a number of means to accomplishing this alignment, the most effective is to integrate business planning and technology planning within a common framework, and this is the basis for our project prioritization workshop where technology priorities are set by the organization’s business stakeholders.

Figure 6, Planning and Prioritization Process, depicts the methodology that was used in the development of the project roadmap that is the core of the ITMP.

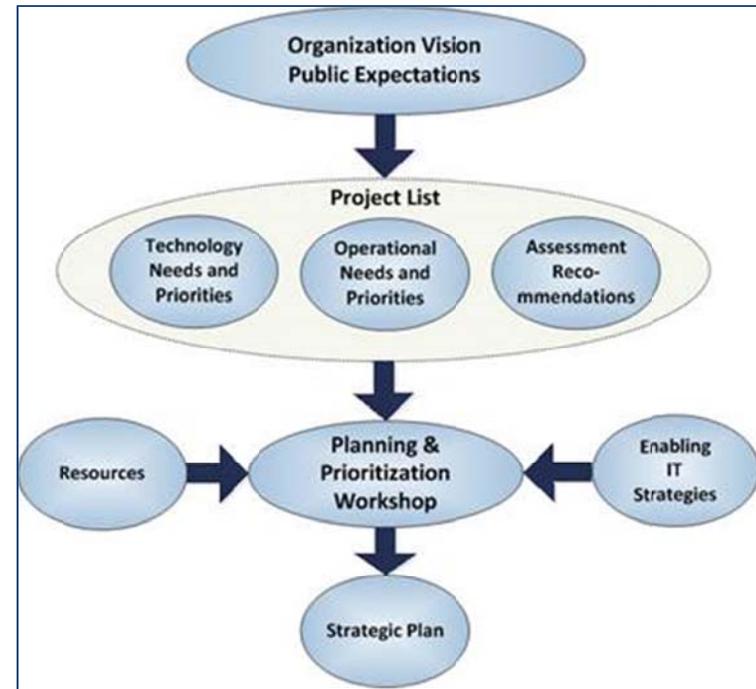


Figure 6 – Planning and Prioritization Process

The inputs to the prioritization process included:

- The organization’s vision (business direction and priorities) and public expectations
- The operational and technology needs and priorities that were identified by the Agency’s stakeholders and the recommendations presented in the IT Assessment document. Detailed descriptions of identified projects are provided in the Appendix
- Although staff resources most commonly come to mind (and indeed, staff resource availability is often a critical

limiting component in planning technology projects); project funding, particularly the ability to provide stable funding for information technology over the course of the ITMP, is similarly critical

- Emerging technologies and developments can facilitate the achievement of the Agency's priorities, some of which are only now being developed.

3.3 - Information Technology Trends

As mentioned previously, it can be insightful to examine information technology trends to establish a framework for strategic planning. Assessing the successful application of these technologies by other governmental entities can be helpful to Zone 7 in its on-going planning efforts. Technology developments, when applied to business needs, will assist the Agency in meeting the demands of its constituents, while operating in a fiscally sound and cost-effective manner.

NexLevel believes emerging technology trends should be at the forefront throughout the planning process and can enable the Agency to continually improve its ability to deliver IT services more effectively and get more value (i.e., quality and productivity) from existing staff resources and external service providers. Some of the more noteworthy trends include:

➤ Integration of Operational and Technology Planning

Planning documents often speak to the need to align technology plans and directions with business or operational needs and priorities – generally this implies a two-step process in which operational plans are developed and then technology plans are crafted to support them. NexLevel believes that this process is not as effective as it could be since the transformative impact of technology should be considered in the course of developing

business plans, not afterwards. Industry best practices and research confirm that organizations that integrate business and technology planning in a common framework achieve better results than those that do not.

➤ Resource Management

The governance of the use of technology has multiple levels. At the simplest level, governance is generally concerned with promoting the coordination of information technology priorities, directions, and objectives across the organization to prevent siloed projects that are undertaken without full consideration of organization-wide processes or existing investments. At more complex levels, governance becomes concerned with the long-term allocation of IT and departmental resources (budget, staff resources, and technology resources) to obtain higher returns on the organization's investment in technology and in ensuring that the organization has a sustainable funding model for information technology.

One of the paradigm shifts related to the adoption of higher levels of governance is related to viewing technology costs in terms of programs (i.e., looking at all costs related to the use of a technology including initial capital / acquisition costs, support costs, enhancement costs and replacement costs) over its lifespan rather than in terms of individual projects. The development and maintenance of program costs for technology is a key component in the development of sustainable funding plans.

➤ Electronic Document / Content Management

Electronic Document / Content Management Systems are enabling technologies that make workers more effective by reducing their need to perform non-value added document-related tasks and minimizing their dependence on paper documents.

➔ User-Centric Service Delivery

Technology organizations need to look at service delivery from a user / customer-centric perspective rather than by functional and/or organizational silos. User-centric organizations are based on cross-functional teams that include a variety of team members with different skill sets working together to deliver services. These teams are generally led by “Customer Service Team Leaders” and supported by a Customer Service Manager and senior IT managers who allocate IT staff members to the cross-functional teams.

➔ Strategic Sourcing / “Cloud” Services

Strategic sourcing is based on the concept of obtaining and using the most effective service provider to respond to user needs and enabling permanent IT staff members to focus on high-priority, high-value tasks and technologies while allocating non-mission critical “utility” functions that require less organization-specific knowledge to lower-cost service providers. For many organizations in both the public and private sector, so-called “cloud” based services including infrastructure as a service (IaaS), desktop as a service (DaaS), and software as a service (SaaS), offer an alternative to initial capital expenditures, the recruitment of additional staff members or the procurement of traditional staff-supplementation services (contractors).

Organizations tend to keep mission-critical applications or applications that contain highly-confidential information in-house while sourcing utility functions to reduce costs and to achieve a higher degree of consistency in service delivery. Key benefits of sourcing include:

- The ability to obtain services under the terms of a service level agreement

- The ability to obtain service coverage for extended hours of operation including 24x7.

➔ Mobile Computing and the “Consumerization” of IT

Collectively, these trends represent a significant opportunity to improve the effectiveness and timeliness of service to the public; however, they are also vexing for enterprise IT planners since users need access to enterprise information and services from portable devices that are subject to loss and damage using public networks that are not secure, and they are increasingly doing so with devices of their own choosing, adding complexity (and thus cost) to the process of mobile device management and potentially exposing the enterprise to cyber-attacks.

Nonetheless, mobile computing is a “game changer” in the public sector, enabling information to be entered or updated on a real time basis and eliminating the need to capture information on paper or offline and then enter or upload the information in the office, and providing real-time information when it is most needed (i.e., in responding to incidents and emergencies).

➔ Organizational Change Management

Increasingly, organizations find that organizational change management (OCM) is a critical component in obtaining long-term benefits from the implementation of enterprise systems (business applications) which are intended to improve operations or minimize the impact of implementation activities on daily operations. OCM provides a framework for managing the effects of the implementation on new business processes, changes in organizational structure, or changes in culture (including changes in focus and change in performance metrics).

Although OCM has its roots in the private sector, it has become more visible in the public sector as executives have fewer tools

(such as bonuses and other incentives) to get line managers and staff to initially buy into change and remain committed. OCM places a focus on improving communication, setting expectations, and working to minimize the impact of misinformation. This has proven to be particularly critical in dealing with represented classes of employees. The implementation of effective OCM capabilities has become a critical factor in enabling organizations to maximize the value that they receive from the implementation of enterprise systems.

➔ Project Management Office (PMO)

Project Management is generally regarded as a tactical activity whose primary function is to record project progress and to generate status reports. While this is an important component of project management, the overall scope of project management has greatly expanded with the need to implement enterprise-level and mission-critical information technology projects.

Whereas the focus of project management in the past was on milestones and deliverables, enterprise projects require additional focus on communication and collaboration and require a more strategic form of project management that includes:

- Collaborative project planning
- Change and issue management
- Risk management
- Resource management
- Contract and vendor management
- Communication management

A staff member who has limited, but suitable, experience and/or a professional certification in project management, may capably perform the tactical aspects of project management as part of their current job duties. However, they may be challenged to perform the more strategic aspects of project management which require significant experience (management and technical knowledge), strong interpersonal and communication skills, as well as application functional experience.

These individuals, often referred to as senior project managers, tend to be highly paid and highly sought after. Few agencies can afford to have a senior project manager for every enterprise or mission-critical technology project, so they tend to form a “Project Management Office”, or PMO, where a single senior project manager provides guidance, assistance, and oversight for less experienced staff members and serve as a trusted project resource for senior management.

There a number of approaches for the implementation of a PMO or to provide similar services for the organization including:

- Having the organization’s IT Manager perform the PMO function with the assistance of staff
- Having a dedicated PMO staff within the information technology organization
- Obtaining PMO services from an external service as needed.

3.4 – IT Plan Enablers

Introduction

As Zone 7 begins the implementation of projects identified in the ITMP, NexLevel recommends that the following critical factors be addressed as quickly as possible. We believe they are critical, and if Zone 7 does not proactively address them, existing issues will

continue and the ability to implement the ITMP will be at best hindered, and at worst, be completely hampered.

These enabling recommendations are the foundation upon which the execution of the ITMP is built and are addressed in the following paragraphs.

Technology Governance

Technology strategic plans are often likened to roadmaps in that they chart the optimal route for an organization from where they are today (“the current state”) to where they need to be (“the target state”); however, there are other similarities as well. Just like any trip, the destination may change as may the stops along the way, and as anyone who has travelled with family knows, there are often those who ask questions:

- “Do we really have to go?”
- “Are we there yet?”
- “Can we get there faster?”

These questions are all too familiar to organizations that are working to transition their technology environments to a target state, and underscore the critical role that technology governance, coupled with well-defined and measurable objectives, plays in the transformation of technology environments. Governance comes into play in the definition of the target state and the interim objectives as well as in the prioritization of the individual projects that comprise the roadmap and in the assignment of resources to the projects.

Technology governance is generally defined as the leadership, communication structure and processes that ensure the organization’s information technology sustains and extends its

business strategies and objectives. More specifically, governance helps ensure that:

- Technology priorities and funding are aligned with the business goals and objectives (strategic alignment)
- Technology is a business enabler and maximizes benefits (performance measurement)
- Technology resources are used responsibly (resource management)
- Technology risks are managed appropriately (risk management)
- Technology delivers value to the organization (value delivery).

Critics often complain that technology governance stifles organizational agility; however, the reality is that the converse is true: it enables organizational agility by allowing organizations to allocate their technology resources to the most critical projects and to keep technology objectives aligned with business objectives and priorities.

Yet, despite the vital nature of technology governance, organizations often struggle to establish and maintain it. Part of the problem is that technology is still relatively new compared to the traditional functions of organizations and the need for technology governance is not engrained in organizational culture in the same way as budgeting, for example. Just as it is not possible to run an organization without having well-defined procedures for budgeting, technology governance is vital for organizations that need to obtain the highest possible return for their investment in information technology. Governance is the key factor that transforms a technology strategic plan from being “shelfware” to being a tool to drive organizational effectiveness.

In the absence of a formal IT governance process, decisions regarding technology directions and priorities can be inconsistent leading to the diversion of resources from long-term infrastructure projects, additional costs, delays, false starts, the adoption of applications and technologies that seem promising at first but that are dead-ends, and disagreement among departments as to the allocation of scarce resources. An ad-hoc process also makes it difficult to ensure the alignment of technology plans and priorities with its long-term goals. The key difference in a collaborative IT governance process is that the stakeholders, and not the IT organization, are responsible for the success of technology projects. As a result, more often than not, obstacles are overcome and projects succeed.

The need for an effective approach to IT governance is driven by a number of additional factors, including:

- Organizations need to change to remain effective. The research is compelling that organizations that integrate business and IT planning under a common framework utilize technology more effectively and are more agile and responsive
- The public is increasingly aware of the cost of technology initiatives and public officials are exposed to criticism when these projects take longer than expected, involve additional costs, or do not meet their intended goals
- Applications are less siloed today than they were in the past. Applications are either increasingly dependent on the timely exchange of accurate information with other applications or used by multiple departments resulting in not just the integration and sharing of data, but the integration of business processes as well. When organizations consider replacing legacy applications, they

need to find and maintain a balance between: (i) applications that are a better fit for departmental requirements and processes; and (ii) enterprise applications that provide economies of scale and facilitate the sharing of information, but that provide less flexibility in meeting departmental requirements

- Policy makers increasingly need real-time access to information and performance metrics
- Increased public demands for information have led to a greater need for transparency
- The increased deployment of public-facing applications including web pages, mobile apps, kiosks, and IVR systems not only makes the public aware of information system and service outages, but also of data accuracy and timeliness issues
- Finally, effective IT governance enables the IT organization to act as a change agent, rather than as a regulator telling users what they can and can't do.

The scope and responsibilities of an effective technology governance structure should include:

- **Oversight of the Strategic Technology Plan:** Provide input to, and review of, technology project priorities and timelines
- **Strategic Direction/Alignment:** Provide input and feedback relative to each planned activity. This dialog will ensure appropriate priority and efficient and effective use of technology systems and services
- **Technology Project Review:** Review of technology projects for consistency and compliance with plans to

ensure business systems are supported by the existing platforms and that they can be easily integrated, as needed, with other applications

- **Policy Guidance and Enforcement:** Review of technology policies and guidelines, approval of policies, and communication to staff to ensure compliance
- **Foster Communication:** Provide a forum for the interchange of ideas, review of technical implementations, and facilitation of intra-departmental communications.

And finally, an effective technology governance structure must play a pivotal role as the implementation of the technology plan progresses. Just as in any trip, priorities may change and obstacles may be encountered; technology governance is needed to make informed decisions as to how best to allocate resources, re-align projects, and ensure the plan is a “living” tool and does not become “shelfware”.

Technology Organization

Factors inhibiting the Agency from making the fullest possible use of information technology and obtaining the information technology services that it needs include the absence of a single vision and voice for information technology in the organization, the absence of strong contract with its IT service provider that clearly defines the scope of services to be provided, and the bifurcated IT support model that includes the County of Alameda, Agency staff, Lanlogic, and other service providers .

While the existing IT Committee is a valuable resource for the Agency, its focus is largely tactical and it is neither chartered nor staffed to provide an enterprise technology vision for the Agency.

The General Manager is considering filling an existing, vacant GIS support position. This individual could be responsible for helping

chart the Agency’s information technology directions and priorities, would manage the relationship between the Agency and major service provider (currently Lanlogic), serve as the primary point of contact with the County’s Information Technology Department, and provide GIS technical support throughout the Agency. NexLevel encourages the Agency to move forward with this organization structure as quickly as resources will allow.

An internal IT resource would provide a singular focus for the management of any sourcing contract, overseeing their work, setting priorities, and ensuring that the services provided meet the Agency’s expectations. This oversight needs to ensure that any Agency external IT service provider is not just “doing things right, but doing the right things.

As the Agency matures in its deployment and use of technology, NexLevel recommends Zone 7 create department-based Business Application Specialists for major business applications (Finance, GIS, Maintenance Management, and SCADA) thereby reducing the reliance on the technology organization for application assistance and to increase department management of the application based on departmental needs. In the future, the introduction of new technology should be sponsored and driven by department staff with the technology organization providing necessary consultation and infrastructure configurations.

End user departments should have staff that are the focal point for how it uses applications, determining the best method of applying the application to meet departmental business needs, interfacing with the support vendor, and overseeing the departmental use of Agency-wide technology (e.g. document management, GIS). The department-based staff should not repair technology equipment, apply technical patches, or perform ongoing system maintenance. The IT organization, on the other hand, should be the infrastructure experts and keep the applications current (version control), the

network running at peak efficiency (infrastructure design and monitoring), provide for data security (data backups), answer technical questions and create interfaces between various applications and databases.

NexLevel recommends that Zone 7 continue to utilize the specialized services of quality technology providers to supplement existing staff or to meet short-term project needs. These services might include email services, network operation and/or fine-tuning, and project implementations. This “selective sourcing” can be an effective strategy to extend an organization’s capabilities, gain access to best practices, or obtain increased expertise (i.e. security, system administration, database, etc.) through vendor leveraged resources.

Finally, as Zone 7 procures new technology, it should carefully evaluate alternative service and support models. Vendors should be asked to provide pricing information for traditional technology purchases (i.e. licenses and professional services to install on the Agency infrastructure), as well as for models such as hosted applications (Cloud), Software-as-a-Service (SaaS), Application Service Provider (ASP), and others. On an opportunity-by-prospect basis, the Agency can effectively evaluate the cost vs. the benefits of alternative service delivery models.

Executive Leadership

Whereas technology organizations were previously responsible for implementing and maintaining the infrastructure and centralized applications, these same organizations must now be service managers and service brokers in addition to service providers. In the past, network, systems, and database administrators were the core of IT organizations. Today, business analysts and project managers are needed to support departments with hybrid technology environments that include centralized, departmental,

and cloud-based applications. This necessitates changes in how IT organizations are managed, staffed, and funded.

The most profound change in information technology has not been the shift from on-premises computing to the cloud, but rather the shift from using IT as a back-office productivity tool to using IT as an integral (and often mission-critical) component of how the organization delivers services to departments (users).

When technology was a back-office utility function the general goal was to provide these services at the lowest possible cost and downtime was an inconvenience. Today, with IT being an integral component of service delivery system, downtime is readily evident and has an immediate impact on the organization’s ability to deliver services.

In order to provide an enterprise perspective it is important for organizations to make informed decisions regarding technology expenditures, where to spend the money, when, and on what. Organizations that do not have processes for technology management may survive, even thrive, but research has confirmed that:

- Organizations that align their IT strategies with their overall strategic business objectives obtain greater value (measured in terms of the return on investment (ROI)) for their investments in information technology than those that do not
- Organizations that integrate IT planning and business planning under a common framework do better still.

The successful implementation of organizational and procedural changes must take into account behavioral and organizational culture factors as well. Change, even change that is ultimately beneficial, is subject to resistance, and skepticism. Ultimately, the changes that prevail are those that:

- Have strong executive sponsorship
- Have immediate and tangible benefits and are “owned” by management and staff
- Become anchored in the culture of the organization (what has been called the “new normal”).

Executive management’s role in regard to change and the use of technology comes down to what’s best for the organization as a whole. Without direct involvement of senior management, the effects of poorly managed technology include:

- Significant expense that may have been avoided
- Ineffective (or no) application Integration
- Failure to meet Agency-wide business goals
- Inability to stop projects early
- Failure to consider new technology and services.

3.5 - Development of the Project Roadmap



Figure 7, Development of Project Roadmap

Figure 7, Development of Project Roadmap, depicts the steps involved in the ITMP creation process, each of which is discussed below.

Project Descriptions

Throughout the course of the project, Agency-wide, departmental, and information systems projects were identified and documented by NexLevel. A list of the proposed information technology

projects, identifying each project’s sponsor, its scope, objectives, and the other departments that might be impacted, is provided in the Appendix.

Project Assessment

NexLevel developed an assessment of the relative level of effort, level of risk, cost, and business value for each of the projects in the project list. Table 5, Estimated Cost, Risk, Level of Effort, and Business Value, provides a summary of each project’s potential cost, level of effort, level of risk, and business value, as well as an assessment of project weighting based on the level of effort, risk, and business value.

For each of these the table provides:

- The project title and sponsor
- Project status (In progress, New)
- Impacted departments (Agency departments that may use the technology resulting from the project)
- The estimated cost, low to high, in \$000’s
- The estimated level of effort (5=Low, 3=Medium, 1=High, since a lower level of effort is desirable and should receive a higher score)
- The estimated level of risk (5=Low, 3=Medium, 1=High, since a lower level of risk is desirable and should receive a higher score)
- The estimated business value of the project based on the degree to which the project contributes to:
 - Improved staff productivity
 - Improved service delivery

- Improved IT resilience / security
- Reduction in the Agency’s total cost of ownership (TCO) for information technology
- Improvement of the Agency’s return on investment (ROI) for its information technology expenditures

Each of these has been rated (5=high, 3 = medium, 1 = low, since increased business value is desired) and a total score has been derived based on the average of the five factors

- A project weighting based on the level of effort, level of risk, and business value, on a scale of 1 to 10, with 10 representing a project with the maximum combination of level of effort, risk, and business value.

Prioritization Workshop (“Blue Wall”)

The Project Prioritization Workshop was conducted on October 13, 2015, with the main objective of enabling the Agency’s stakeholders to schedule the proposed information technology projects over the three years of the ITMP based on Zone 7’s priorities and available resources.

The agenda for the Project Prioritization Workshop included:

- Briefing the participants on the methodology to be used and the “ground rules” for the workshop including:
 - That the participants were all working from a common framework
 - That each participant would have the opportunity to voice their opinions, and that the group would openly consider each other’s concerns and suggestions
 - That the participants would actively support the group's decisions as the best possible at this time

- That the participants were prepared and committed to working together.

- Reviewing and prioritizing the projects identified in the project list and any new projects identified in the course of the workshop. The prioritization process was guided by a number of key factors including: need / business value, dependencies on other projects, and the availability of the resources needed to complete the project
- Establishing the high-level timeline that is the basis for the ITMP
- Reviewing the next steps.

Figure 8, “Blue Wall”, depicts the results of the prioritization workshop.

Project Roadmap

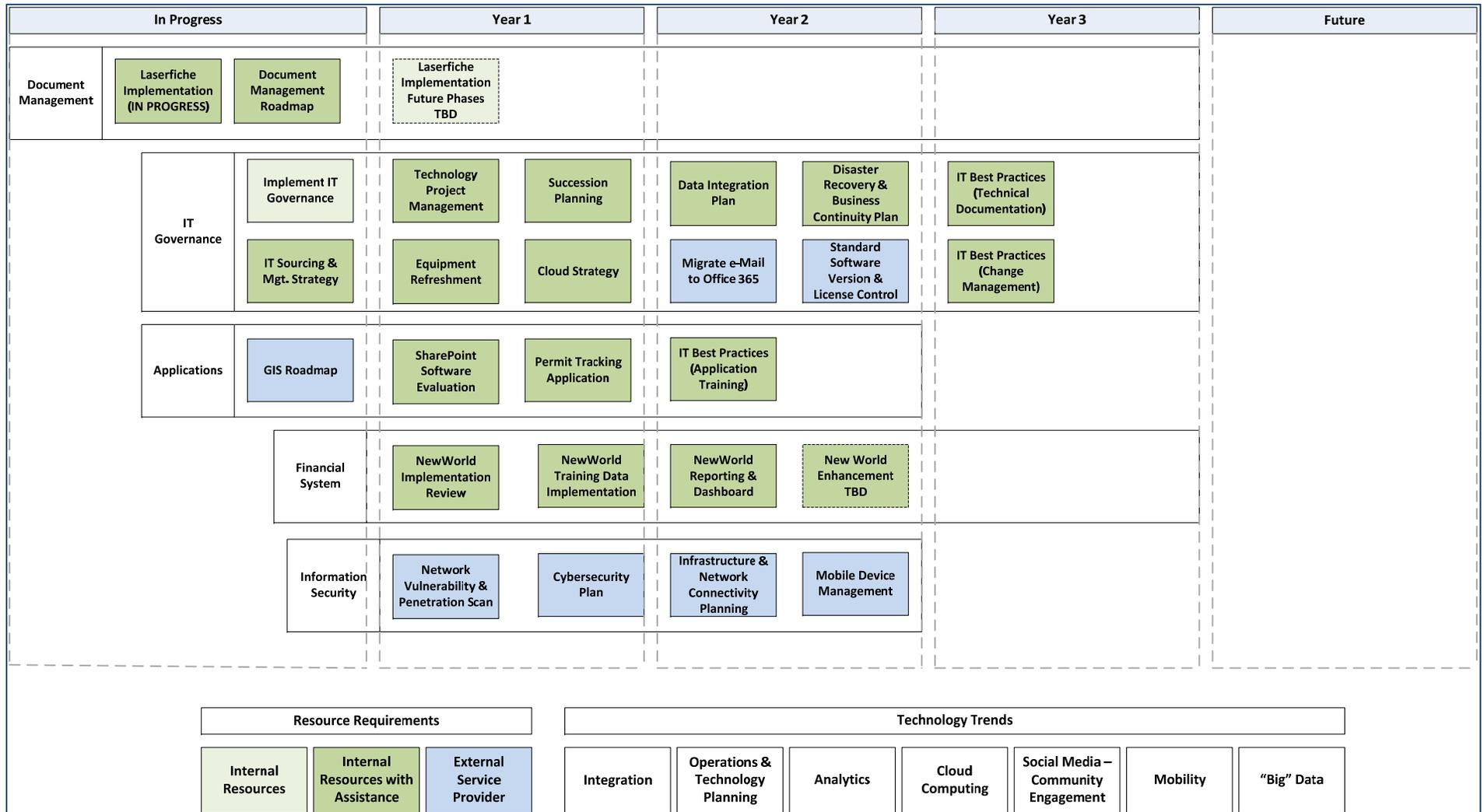
During the Prioritization Workshop, the Agency’s key stakeholders decided that they would prefer not to create a detailed, fiscal year-based project roadmap which would spread individual projects out over the full duration of the three-year plan. Instead, they chose to create project tracks which grouped like (and in some cases, dependent) projects into 5 individual technology tracks, Document Management, IT Governance, Applications, Financial System, and Information Security.

These technology tracks will be managed by Agency executives over the 2-3 years as implementation resources become available.

Table 5 – Estimated Cost, Risk, Level of Effort, and Business Value

Project Title	Project Sponsor	Project Status	Impacted Departments	Total Cost to Implement (\$000's)		Level of Effort (1 = High, 3 = Med, 5 = Low)	Level of Risk (1 = High, 3 = Med, 5 = Low)	Potential Benefits (1=Low, 3=Med, 5=High)						Overall Business Value	Effort / Risk / Business Value (1=Low, 10=High)
				Low	High			Improved Staff Productivity	Improved Service Delivery	Improved IT Resilience / Security	Reduced TCO	Improved ROI			
LaserFiche Implementation	Administration	In progress	All	\$ -	\$ -	1	3	5	5	3	3	5	4	5	
*** SUBTOTAL, IN PROGRESS PROJECTS:				\$ -	\$ -										
GIS Roadmap	Engineering	Proposed	Eng, Ops, Maint.,IP	\$ 15	\$ 20	3	3	5	5	3	3	5	4	7	
SharePoint Software	Engineering	Proposed	All	\$ -	\$ 15	3	3	5	5	3	3	3	4	7	
NewWorld Implementation Review	Finance	Proposed	Finance, Adm	\$ -	\$ 10	3	5	3	3	3	3	3	3	7	
NewWorld Reporting & Dashboard	Finance	Proposed	Finance, Adm	\$ -	\$ 15	3	1	5	5	3	3	5	4	5	
Employee Training/Certification Tracking Software	Finance	Proposed	All	\$ -	\$ 15	3	3	3	3	3	3	3	3	6	
Cloud Strategy	Administration	Proposed	All	\$ 5	\$ 10	3	5	3	3	5	3	3	3	8	
Data Integration Plan	Administration	Proposed	All	\$ 10	\$ 15	1	5	5	5	3	3	3	4	7	
Disaster Recovery & Business Continuity Plan	Administration	Proposed	All	\$ 15	\$ 20	3	3	3	5	5	3	3	4	7	
Document Management Roadmap	Administration	Proposed	All	\$ 15	\$ 20	3	3	5	5	3	3	3	4	7	
Equipment Refreshment	Administration	Proposed	All	\$ 25	\$ 50	5	3	5	5	5	3	3	4	8	
Permit Tracking Application	Administration	Proposed	Eng, Adm,Finance,IP	\$ 10	\$ 15	5	5	5	5	3	3	3	4	9	
Project Management Principles	Administration	Proposed	All	\$ -	\$ 5	5	3	3	5	5	3	5	4	8	
IT Governance	Administration	Proposed	All	\$ -	\$ 10	5	5	3	5	3	5	5	4	9	
IT Services Sourcing & Management Strategy	Administration	Proposed	All	\$ 150	\$ 200	1	3	3	5	5	5	3	4	5	
Succession Planning	Administration	Proposed	All	\$ -	\$ 15	3	5	3	5	5	3	1	3	8	
*** SUBTOTAL, PROPOSED USER PROJECTS:				\$ 245	\$ 435										
CyberSecurity Plan	IT	Proposed	All	\$ 15	\$ 20	1	3	3	5	5	1	3	3	5	
IT Best Practices Implementation	IT	Proposed	All	\$ -	\$ 10	3	3	3	5	5	5	5	5	7	
Infrastructure & Network Connectivity Planning	IT	Proposed	All	\$ -	\$ 10	3	3	3	5	5	5	5	5	7	
Migrate e-Mail to Office 365	IT	Proposed	All	\$ 20	\$ 30	1	3	5	5	5	3	5	5	6	
Mobile Device Management	IT	Proposed	All	\$ 10	\$ 25	3	3	3	5	1	1	1	2	5	
Network Vulnerability & Penetration Scan	IT	Proposed	IT	\$ 10	\$ 15	3	5	3	5	5	3	3	4	8	
Software Upgrades, Version, & License Control	IT	Proposed	All	\$ -	\$ 20	5	5	3	5	5	3	3	4	9	
*** SUBTOTAL, IT PROJECTS:				\$ 55	\$ 130										
TOTAL ALL NEW PROJECTS:				\$ 300	\$ 565										

Figure 8 – Blue Wall



4 - Conclusion

Information Technology Building Blocks

In closing, it is appropriate to comment on the nature of information technology and the establishment of a foundation for the effective use of business application systems. Figure 9, Technology Expenditures and Return on Investment, depicts the relationships between the components of an organization’s information technology infrastructure, the organization’s cumulative total cost of ownership (TCO) for information technology, and the return on investment (ROI) for those expenditures.

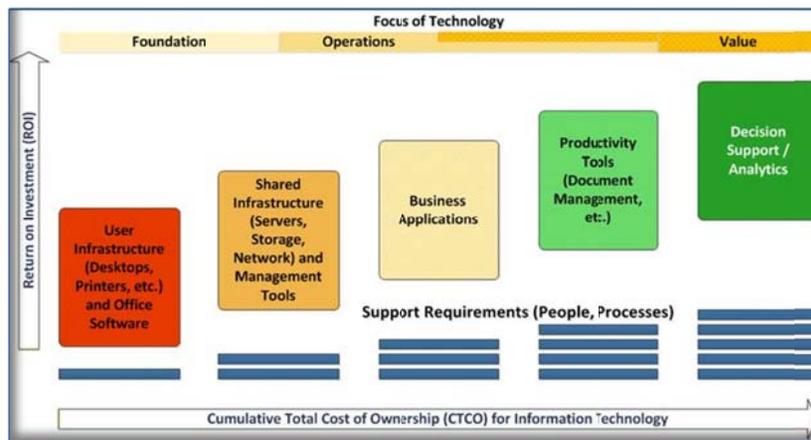


Figure 9 – Information Technology Expenditures and Return on Investment

The implementation of any end user business application (and the ability for an organization to realize its benefits) is dependent on the successful implementation and of the supporting components of the information technology infrastructure including the shared

infrastructure (including servers and storage devices), user infrastructure such as desktop PCs, and enabling technologies.

Weaknesses in any of these supporting components can significantly impede the effectiveness of a business application by reducing availability, performance, and reliability. Faced with an application that is slow or not available when needed due to infrastructure issues, users often resort to the use of ad-hoc databases and spreadsheets. These “shadow IT” applications defeat the basic reasons for implementing an integrated business suite in the first place and further reduce the organization’s ROI while introducing significant security and data consistency issues.

It is thus important for Zone 7 to look at its overall technology environment at a high level and ensure that the foundation for all applications remains solid.

The ITMP is a valuable tool to ensure technology is procured, implemented, and managed in a cost-effective approach that maximizes the benefits to the Agency and its customers.

Technology Resources

The ITMP strives to set reasonable expectations as to when the projects will be initiated and completed. However, a project’s eventual start date will be driven based on factors that cannot be predicted at this time including funding, budget approval, and contingencies. While the intent of the ITMP is to support Zone 7’s budgeting process by providing direction and input necessary to justify expenditures; it is not meant to include detailed specifications, requirements, or recommended vendor solutions. The ITMP assumes the Agency’s staff will follow appropriate planning and procurement processes for each project that include activities such as detailed requirements analysis, formal evaluation and selection, and implementation methods.

As projects are initiated, staff resources will need to be allocated as appropriate. Zone 7 may find it necessary to supplement existing resources with consultants, temporary personnel, and other vendor staff. This will be particularly important during the implementation of complex systems which may require both current operational personal and supplemental staff for testing and implementation.

Information Technology Strategic Planning as a Process

The ITMP is a result of a comprehensive, Agency-wide planning effort that provided the opportunity for management and staff to review, discuss, and integrate their technology needs into a common framework. Hopefully it provides a common understanding of the Agency’s technology priorities and serves as a tool to provide an overall picture of what is to be accomplished and why.

While the creation of the ITMP represents the culmination of only one step in the planning process, it also marks the beginning of another step – one through which Zone 7 leaders must work together to create an environment that supports the ITMP. The Agency must now work closely together, communicate, and be supportive as they begin a journey to create an organizational sense of purpose that goes much deeper than any vision statement, mission statement, or plan can communicate.

Support for the ITMP will need to come in terms of priorities, dollars, policies and practices. Successful implementation may mean making compromises, and it will mean exercising patience, taking an organization-wide perspective, and maintaining a continued focus on revising the plan as events take place. And finally, it will take cooperation, communication and flexibility to adapt to changing needs, technologies and resources.

5 - Appendix

Project Descriptions

The project descriptions provide the initial list of projects that were identified by the Agency during the ITMP process. Please note that as the project roadmap was refined, some of these projects were:

- Completed and removed from the list
- Combined with other projects
- Deleted by the participants in the Project Prioritization Workshop
- For each project the appendix provides:
 - The name of the project
 - The project's sponsor(s)
 - Reference (Genesis of the project)
 - Recommendation = NexLevel project recommendation from the IT Assessment Report
 - Interviews = Projects identified by the Zone 7 staff during NexLevel interviews or during project group meetings (Workshops)
- A description of the project.

Name	Reference	Sponsor	Description
Cloud Strategy	Findings & 4	Admin	Create a formal cloud strategy that identifies services and applications that could be moved to the cloud along with the costs and benefits involved. The project would include the development of pilot projects to better assess the suitability of the cloud for meeting the Agency’s business objectives.
Cybersecurity Plan	Findings & 3	IT	Create a NIST conformant cybersecurity plan to remediate any identified vulnerabilities resulting from the network vulnerability/penetration scan. The cybersecurity plan would create an on-going approach to security management including periodic threat assessments and the development of strategies to detect and respond to security breaches. The cybersecurity plan would define the necessary steps to improve the security of physical facilities including server rooms, wiring closets, and remote facilities such as pump stations, etc. In addition, this project would define a process to educate users, especially those using mobile devices, regarding security risks, safe networking practices, and their responsibility to protect Agency information and assets.
Data Integration Plan	Findings & Interviews	Admin	<p>The Agency has a highly-siloed applications environment with few provisions for the automated exchange of information between applications within the Agency (such as New World, TabWare, SCADA data, and GIS) or between the Agency and the County (New World and PeopleSoft). As a result of these siloed applications and their siloed repositories of information, the Agency expends resources to:</p> <ul style="list-style-type: none"> • Re-enter the same information into multiple applications • Reconcile the information contained in the applications (especially between PeopleSoft and New World) • Consolidate data to generate reports <p>In addition to the consumption of resources, this impedes the Agency’s ability to plan and to conduct operations. This project would provide for the development and implementation of specific actions to improve information sharing and to reduce the manual effort related to the maintenance of separate repositories of information through the development and implementation of automated interfaces between Agency applications such as New World</p>

Name	Reference	Sponsor	Description
			and the CMMS. This project would include the definition of specific information exchanges including the information to be exchanged, the trigger(s) for the exchange, the data relationship rules, and the medium for the exchange (flat file, XML, etc.).
Disaster Recovery & Business Continuity Plan	Findings & 3	Admin	Create and implement a Zone7-wide Business Continuity Plan and an IT Disaster Recovery Plan that would help to ensure timely recovery of core applications in event of an unplanned event or outage based on business and operational imperatives. Implementation of the plans should include any hardware, software, off-site services, and training required to meet business and operational recovery requirements. This project would create a plan for the on-going operation and recovery of the technology infrastructure to support Agency operations during a time of local or regional emergencies.
Document Management Roadmap	Findings, Interviews & 6	Admin	Establish a formal plan for the use of LaserFiche that incorporates the document management needs of Zone 7 and the integration with other core applications (New World, TabWare, GIS, etc.). This project would establish an enterprise view on how to effectively best use LaserFiche by defining file structures, retention policies and record archiving. The project would define rules for improved workflow by streamlining document handling processes and providing electronic approval/signature functionality. The project would create robust search tools that would allow the community to view public documents electronically and reduce document storage/management inconsistency between departments.
Employee Training/Certification Tracking Software	Interviews	Finance	Determine if the existing New World software supports the tracking of employee training, certifications, licenses, and other personal professional growth data and determine the most effective method of maintaining and updating the collected data. This project may include the acquisition of stand-alone application if the New World system does not meet the Agency’s requirements.
Equipment Refreshment	Interviews & 7	Admin	Establish an annual budget allocation for the systematic replacement of desktops, laptops, and network infrastructure devices. The purpose of this project is to keep the maintenance on equipment to a minimum, provide equipment that will operate effectively with new software, eliminate the use of “trickle-down” equipment, and ensure upgrades to the

Name	Reference	Sponsor	Description
			communications network, access points, Wi-Fi coverage, and other necessary telecommunication devices are performed on a routine basis.
GIS Roadmap	Interviews & 5	Eng.	Establish a GIS roadmap including implementation/use recommendations for the routine operation and expansion of the ERSI GIS application in order to improve the utilization of GIS as a core tool for the Agency to access critical information on a timely basis. GIS has the ability to provide a single access method to selected documents and records. In addition to mapping services, GIS technology enables effective information sharing between departments. GIS systems can be powerful tools for researching information by geographic location. As-Builts, operating manuals and warranties, billing information, water data, and myriad other data can be tied to assets and geographic spacial layers within the GIS system. Remote access to GIS using a mobile device can significantly increase efficiency for field crews. This project would map existing data, define new data collection requirements, maintenance requirements, support resources needs, and software integration specifications.
IT Best Practices Implementation Note: Figure 8 shows each activity as a separate project	Interviews, Findings & 7	IT	This project includes the development and on-going maintenance associated with the use of IT best practices for IT service delivery and support. As detailed in the IT Assessment report, these practices include: <ul style="list-style-type: none"> • The creation of documentation for its IT infrastructure • Processes for change and configuration management • Technology Refreshment • On-going application training
IT Governance	Findings & 1	Admin	Zone7 should establish an IT Governance Committee that is chaired by the General Manager, with the Assistant General Managers and key department heads as members. Responsibilities of the Committee include: <ul style="list-style-type: none"> • Establishing the technology vision for the Agency

Name	Reference	Sponsor	Description
			<ul style="list-style-type: none"> • Providing oversight for technology projects • Ensuring technology resources and priorities are aligned with organizational objectives • Overseeing the remediation of the Agency’s IT service delivery processes • Defining department and staff technology responsibilities • Establishing an Agency-wide data integration strategy • Establishing and enforcing technology policies & procedures • Updating the IT Strategic Plan
IT Services Sourcing & IT Management Strategy	Findings & 1, 2	Admin	<p>This project would create a permanent IT Manager position within the Agency to provide a single-voice for technology delivery.</p> <p>In addition, this project would develop comprehensive agreement(s) for sourcing IT services by clearly defining the services to be provided, expected service levels, and responsibilities of all parties. This project would establish regular reporting and service level measurements to ensure the contractual agreement is effective and modified to meet ever-changing technology requirements.</p>
Infrastructure & Network connectivity planning	Findings & 4	IT	Retain an outside vendor to map and analyze Agency-wide network connectivity (including stabilization of Wi-Fi). Implement communications equipment to provide reliable connectivity to technology devices.
LaserFiche Implementation (IN PROGRESS)	Findings, Interviews & 6	Admin	Create a formal project charter, create a project steering committee, develop a project schedule, and monitor the implementation of the LaserFiche software. The project committee should work closely with the LaserFiche vendor to define manual file conversion specifications, and on-going staff training requirements.
Migrate e-Mail to Office 365	Interviews	IT	This project would move the Agency’s e-mail to the Cloud using Office 365. The migration would provide for archiving email, retrieval, and software currency for Microsoft products.

Name	Reference	Sponsor	Description
Mobile Device Management	Findings, Interviews & 4	IT	Implement a mobile data management solution (MDMS) with associated policies and procedures to help protect the Agency’s technical infrastructure. Since mobile devices allow remote access and allow an organization’s data to reside outside the traditional brick and mortar, it is important that appropriate security protocols are adopted. MDMS offer the ability to better manage security and protect data. The project may be part of the Infrastructure & Network Connectivity Planning Project.
Network Vulnerability & Penetration Scan	Findings & 3	IT	Conduct a communications network analysis, vulnerability scan and penetration test, including all wireless nodes, by contracting with an independent, third-party vendor which specializes in this conducting this specialized service.
NewWorld Implementation Review	Findings	Finance	This project entails a comprehensive post-implementation review and assessment of New World system to identify how it could be used more effectively to support Agency operations. The scope of the project should include review of each of the software modules owned by the Agency, evaluate performance issue, review business processes, identifying areas where workflow could automate processes and approvals, determining reporting and dashboard capabilities for data distribution, mobile usage, and user training needs.
NewWorld Reporting & Dashboard	Interviews	Finance	Conduct a review of Agency-wide reporting requirements and determine the most effective solution for generating reports from databases maintained by all departments. Currently several tools are used for report creation (New World, Crystal, Word, Excel, custom-created, etc.) all of which may be best supported by New World’s Decision Support & Business Analytics Solutions. This project would identify a standard method of creating reports, acquire (if needed) a tool, and provide initial as well as on-going staff training.
Permit Tracking Application	Interviews	Admin	Acquire a software application that will allow for the tracking of various citizen permits required by the Agency (Wells, lawn conversions, etc.). This software would create an on-line mechanism for form submittal, fee payment, and approval tracking to better serve the public and assist the Agency in managing the entire permitting process.

Name	Reference	Sponsor	Description
Project Management Principles	Findings & 1	Admin	Establish project committees and processes such as charters, meetings, and status reporting which could result in better use of resources and foster improved communications among departments. At a minimum, project charters should be developed for all projects and include: description, stakeholders, timeline/deliverables, risks/assumptions, methodology, financial resources, and signatures. The project would provide a standard methodology for the implementation of technology projects within the Agency.
SharePoint Software	Interviews	Eng.	This project would determine the further use of SharePoint within the Agency. An evaluation of the business needs, training requirements, data migration, use policies, and on-going maintenance for SharePoint or other collaboration tool would be conducted. Once complete, a project charter, committee, and plan would be developed to ensure the tool is implemented in an effective Agency-wide manner.
Standard software & version control & license control	Findings & Interviews	IT	Develop a policy and process to ensure installed Agency software is standardized and maintained at current, vendor-supported, operational levels. This project will also ensure: <ul style="list-style-type: none"> • Zone7 is in compliance with software licensing requirements • Service packs and patches from Microsoft and other software providers are routinely installed • Security threats including intrusions, viruses, and malware are monitored and remediated • Funds are annually allocated for the regular updates and maintenance of all Agency software
Succession planning	Interviews	Admin	Create employee succession plans for individuals throughout the Agency that support technology systems (SCADA, GIS, business applications, etc.). This proactive planning is critical as staff retires, advances to new opportunities, or leaves the Agency. In addition, back-up or succession planning is critical during an operational disaster or emergency situation.