Information Technology Strategic Plan
2023 Refresh

for

South Tahoe Public Utility District
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South Lake Tahoe, CA 96150

From

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The South Tahoe Public Utility District (District), a public agency established on September 28, 1950, (pursuant to Section 9 of "The Public Utility District Act") supplies drinking water and provides sewage collection, treatment, and export to protect Tahoe's delicate ecosystem. Managing this complex operation requires an uncommon environmental sensitivity.

District's Vision Statement

Maintain a dynamic organization that can quickly and proactively meet an ever-increasing environment of regulations and scarce resources.

District's Mission Statement

Furnish our customers with reliable water and wastewater services, and provide those services safely, efficiently, and cost effectively.

Strategic Goals

- Provide exemplary customer service.
- Provide reliable and safe water distribution, wastewater collection and treatment, and recycled water land application systems.
- Foster a culture of efficient water use in our community and promote public awareness of all District activities and the value of District services.
- Develop staff to ensure professionalism and continuity of organizational knowledge.
- Continue to be outstanding financial stewards.
- Provide a safe and harmonious work environment for District employees.
- Maximize appropriate use of technology to improve operational efficiency and prioritize asset replacement.

The 2022-23 annual budget shows the District has 115.5 full time equivalent (FTE) staff positions.

The Strategic Plan assesses the Information Technology needs across the vast array of District services.

Executive Overview

Executive Overview

Objective

The District has commissioned a five (5) year Information Technology Strategic Plan Refresh including a Business Continuity and Disaster Recovery Refresh and a Security audit. The Government Technology Group (GTG) performed an assessment of the use of information technology across the organization in June/July of 2022. This included a complete review and evaluation of the District's current IT services and organizational structure which supports core business functions of the District organization, the personnel/staffing requirements necessary for the support of systems, and the managerial and governance structures employed to support the operational mission of the existing IT delivery. This final report will comprise a five-year strategic plan to outline a path for the District to improve its information technology services. Aligning with the District's stated Mission and Vision statements the following is the IT Mission, Vision, and Values statements.

Mission

- Provide expert, prompt, and courteous hardware and software support services to all District employees.
- Ensure that mission critical computer systems are dependable and fully functional at all times.
- Facilitate professional and effective training on all standard District software to maintain the maximum level of productivity of District employees.
- Develop strategies to utilize proactive, cost-effective technological solutions applicable to the efficient operation of the District.
- Assist other departments in the extraction, compilation, and analysis of information maintained in District computer systems.

Vision

- Provide a comprehensive information technology strategic plan that aligns with the district's mission and values leading to strategic, innovative, cost-effective, and professionally managed programs to support the residents, elected officials, and staff of the District.

Values

- Provide a prominent level of responsive, dependable, and timely service to the community.
- Align with and enable implementation of the District's overall mission, vision, goals, and initiatives to fulfill the organization's business requirements.
- Protecting the District's and customers' information from unauthorized use or access.
- Ensuring that technology resources can be counted upon to support service delivery.
- Provide innovation and explore new ways to accomplish the needs of the district by improving efficiency, collaborating internally, and regionally, to enhance agency programs through creativity.

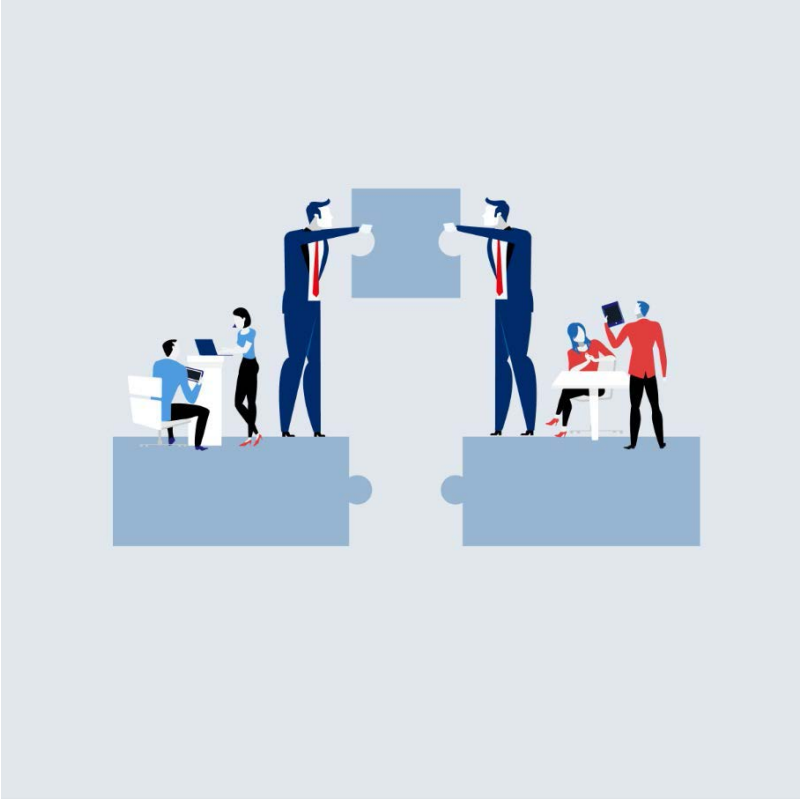
Description of process

An in-depth assessment was undertaken to compare the existing District IT service delivery model with industry standards and best practices. This research involved verifying the IT Department's existing service delivery model, also where and how economies and efficiencies can be implemented to assist the District with its goal of streamlining and improving its IT service delivery through a comprehensive strategic plan.

The strategic plan process, coupled with consideration of industry best practices, identified the following critical dimensions for supporting the strategic implementation of IT programs:

- **IT Decision Making** – Implement roles, responsibilities, and processes necessary to make sound IT investment decisions.
- **Applications** – the District desires to use "common, off the shelf" (COTS) software, with regular training, including business process reviews, to take advantage of new features to support District's business functions.
- **Technical Infrastructure** – manage systems with an asset replacement fund to maintain and invest in the hardware, software, databases, and network infrastructure necessary to support the District's business applications.
- **Service Delivery** – provide an IT organizational structure and staffing approach that meets the needs of the stakeholders and the District with the expertise to support the day to day needs of the District and critical technology services when needed.
- **Broaden Community Access** – provide systems to support the District's business functions that promote resident engagement and provide transparency and accountability to the community.

This plan establishes the course for the organization and is a roadmap to keep the organization focused on using time and resources efficiently. This enables the District to prioritize and address specific needs and issues that impact everyday operations while being agile to take advantage of innovative technologies. To be successful, this document is to be shared, understood, and utilized if it is to be effective in improving services for the District's customers. The Information Technology Strategic Planning process relies on continuous improvement as it is a guide for operations and decision-making. In order for this plan to be successful, buy-in and support by the District, and adherence to an overall guiding strategy is essential.



Strategic Planning

Strategic Planning

An information technology (IT) strategic plan is a document that details the comprehensive technology-enabled business management processes an organization uses to guide operations. It serves as a guide to IT-related decision-making, with IT tasks prioritized and implemented using the plan as a framework.

A plan also helps guide an organization as it formulates its overall IT strategy. While an IT strategy focuses on how IT will help an organization succeed, an IT strategic plan is a roadmap to help implement those strategies. The plan outlines areas where IT can contribute business value and where an organization can gain success by making the best use of technology resources.

The objectives outlined in an organization's IT strategic plan align with the organization's goals and mission but are pliable enough to accommodate new business priorities and technologies that have the potential for addressing growth. It is important for an organization's IT team to know its priorities and identify the IT projects in which they should invest. According to Gartner, an IT research and consultancy company, the plan delineates what must be done and in what priority.

The IT strategic plan should outline a mission statement that states what it plans to achieve and how the IT strategy relates to the organization's overall objectives. Often the first step to creating an effective IT strategic plan is to start with reviewing the organization's existing strategic plan, which helps in identifying the areas where the use of technology can support the District's vision, mission, and goals to improve operations.

The IT strategic plan should include an analysis of its strengths, weaknesses, opportunities, and threats (SWOT) to identify both internal and external factors that can affect IT's ability to contribute to an organization's success. This process will also help analyze the gap between where the IT Department currently is in achieving its goals and what it wants to achieve. The department can then identify the barriers and the resources needed to bridge the gap.

Finally, it is important that the IT strategic plan be clear about its ultimate goals, including a list of technology investments that the IT Department deems a priority to contribute to the organization's success. However, the plan should also include evaluations of an organization's current IT budget and responsibilities within the IT Department to meet these objectives.

Information Technology Best Practices & Technology Trends

Best Practices

IT best practices have become a dynamic, strategic, and indispensable asset for any organization to meet its objectives and should be followed by any organization implementing an IT strategic plan. The following key strategies and desirable behaviors are based on industry best practices and can be used to provide the basic criteria, behaviors, constraints, and flexibility needed to make consistent technology decisions:

Key Strategies

- **Invest in programs, business systems and applications** that provide the District the most benefit and make the best use of existing human and financial resources.
- **Develop strategic and tactical approaches to** improve automation support of key functions at the District (e.g., document management, collaboration, etc.)
- **Develop strategic e-Government approaches to** provide information to the public without borders (e.g., use of the Internet, social media, boardroom, smart phone accessibility, etc.)
- **Continue to maintain the District's selection and implementation practices and policies to** follow industry standard best practices to improve communication and agility of project evaluation and recommendations.
- **Continue to support the District's network security and compliance needs to** ensure technology systems are secure and privacy is protected.
- **Maintaining and investing in IT infrastructure** will enable the District to stay current with existing systems and the demands of expanding technologies.

Desirable Behaviors

- **Joint decision making across District departments** by creating and implementing an IT governance structure.
- **Disciplined Investment** in technology by using resources committed to this purpose through a dedicated funding source such as an asset replacement fund.
- **Business ownership of IT related projects** to encourage buy-in, problem solving and efficient use of staff resources to implement and enhance systems.
- **Buy rather than create** by committing to commercial off-the-shelf (COTS) software procurements and implementations.
- **Reuse of systems and technologies** by first looking to enhance or expand existing software or infrastructure before replacing.
- **Programs must be sustainable** and sufficient staffing and infrastructure resources must be included and continued to ensure the success of a new or expanded technology project.

Guiding Principles

- **Commitment to Service Excellence**
- **Support the Business Needs to Service Customers**
- **IT Investments Should Target Strategic Priorities, Standards, and Integration**
- **IT Governance Encourages Desirable Behavior in Use of Technology**
- **Protect the District's and Customer's Information from Unauthorized Use or Access**

Other Best Practices

- **Use a framework to help manage the organization's information technologies, as well as the resource that interacts with them, to meet the challenge.** Some of the preferred frameworks for organizations in the world are ITIL, COBIT, and ISO. They are all only referential and do not represent rigid standards that must be strictly adhered to. An organization should choose processes that suit their organizational culture.

- **Get support from top management which is a key factor in the success of good IT Management.** A key factor in the success of good IT Management is senior management, which provides direction, mandate, and ongoing commitment to the initiative. This is about implementing governance and management practices. It is, therefore, a responsibility at the highest level of the organization. Without strong senior management involvement, following best practices will become a challenge.

- **Make sure there is clear communication using an adopted, common internal language or lexicon, to ensure clear communication.** Every organization adopts a common internal language or lexicon to ensure clear communication. This is the language that should be used when trying to convey the key points in the implementation of best practices in your organization. The application of best practices can become complex, so facilitate the implementation process by communicating with other members of the organization in a language that is understandable to everyone.

- **Start with easy-to-reach goals with every project introduced into the professional environment, it is important to focus on the "Quick Wins**." As with every new project introduced into an environment, it is important to focus on the "Quick Wins." This rapid achievement of objectives and realization of the first benefits will help to strengthen credibility and trust. In this way, it will reinforce the continuous investment of time and money, as well as the motivation of those involved in the change.

Invest in good tools, automation represents an essential factor in the implementation of any IT Management strategy. Management should make sure that their team has the best tools when conducting their activities. As a result, this will allow the empowerment of workflows and will result in a faster and more efficient delivery of services, composed of processes and measurable results that will help ensure the continuous improvement of IT service delivery.

Technology Trends

Overall, activities, processes, and resources are being digitized and virtualized. On one level, this is simply a function of the increasing capacity and speed of digital technologies. On another level, these trends are driven by a larger mega-trend toward demand-driven, pull-based systems, including agile development and lean production. Much of the rationale for digitization has been around cost avoidance or reduction, whereas the larger trend is primarily focused on increasing customer value and revenue but doing so more efficiently. These trends are interacting with socioeconomic trends, particularly the aging population and reduced workforce, and climate change.

A specific trend directly impacting local governments is the emergence of ***Smart Communities***, which can be defined as "a place where traditional networks and services are made more efficient with the use of digital solutions for the benefit of its inhabitants and business." While Smart Community activities have often been very technology-centric rather than citizen-centric, the general purpose is to improve and integrate public processes. Generally, Smart Communities focus on energy, environment, and public-facing activities, but major internal changes, typically referred to as digital transformation, are necessary for external improvements.

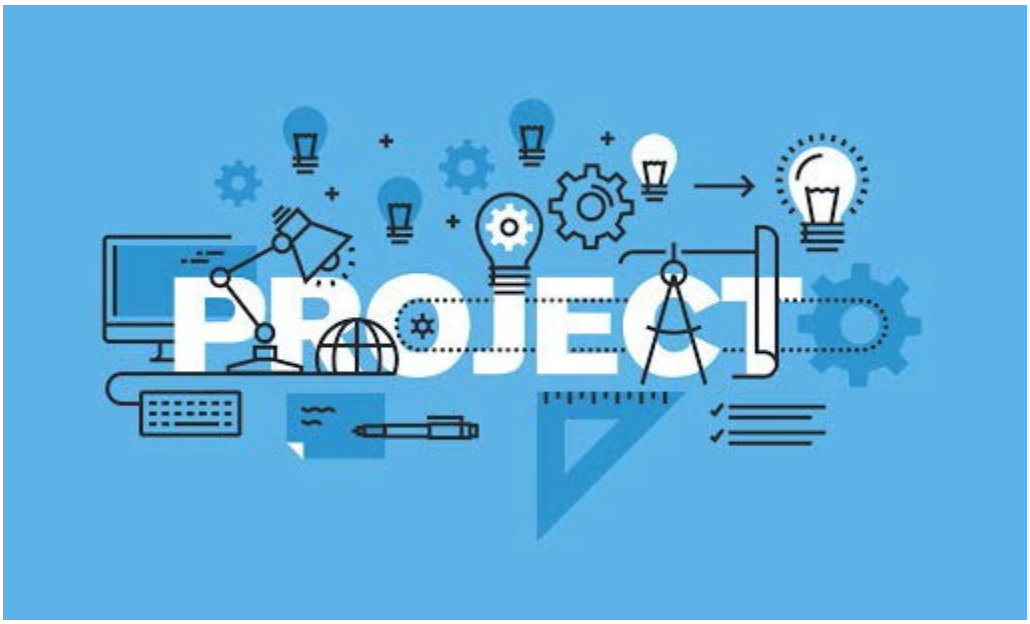
"***Digital transformation*** is the integration of digital technology into all areas of a business, fundamentally changing how you operate and deliver value to customers." This has important implications, not the least of which relate to residents and other external stakeholders. Three related trends are the rise of cloud services, integration of information technologies (IT) with operational technologies (OT), and, most significant for current purposes, emergence of broadband as a utility. ***Cloud services*** include a wide range of applications, data collection, processing and storage, and network functions provided via numerous, distributed computing resources. The two major implications for agencies are (a) reduced need to operate servers but (b) increased costs for and reliance on online services along with (c) new applications—most web-based—that were impractical or unavailable in the past.

A general class of cloud-based applications and related technologies focuses on adding intelligence to assets and machines of various sorts, allowing them to be integrated with information technologies (or vice versa). ***Operational technologies*** (OT) are "[p]rogrammable systems or devices that interact with the physical environment … [to] … detect or cause a direct change through the monitoring and/or control of devices, processes, and events." For agencies, OT includes everything from vehicles to SCADA devices. Increasingly, OT is being added to "dumb" assets such as PLC's. Integration with IT enables cost reduction and performance improvement.

Broadband is technically any channelized communications media, but it has come to mean always-on, high-speed internet access. As agencies undergo digital transformation, broadband is increasingly important in everyday life. On the other side of this trend, agencies that do not have and use broadband are at a huge disadvantage. It is important to understand that broadband isn't an end in and of itself. Rather, it is a means to improved outcomes that enables other trends.

Fiber optics has become the gold standard for broadband deployment. There is no broadband deployment medium that can compare to the speeds, bandwidth, or latency that fiber optics can provide. Wireless, cellular, or HFC cannot hold a candle to the speeds or reliability of fiber. Fiber is essential for backhaul for all networks to connect to the internet. Fiber optic cables are flexible strands of glass that trap the light inside a core of only 8-10 microns inside of a strand that is 125 microns. Trapping the light and being able to control where it is going allows fiber to avoid the many issues that arise form wireless networks and copper networks such as obstacles in a wireless environment to the slow speeds of analogue or digital signals over copper.

Beneath all of these trends runs a more fundamental trend: The critical and growing need for robust ***cybersecurity***. Internet access can provide a way for malicious hackers to steal data from or take over systems. Too much OT has digital vulnerabilities that allow hackers to control them, operate software bots, and attack other systems. Cybersecurity is as much about practices and procedures as well as technologies. For example, "deep fake" technology and spoofing—imitating or taking over accounts—are being used to get critical information or direct payments. People need to be educated about how to recognize possible scams and "social hacks" and avoid them.



Project Purpose and Process

Project Purpose

The District has commissioned a five (5) year Information Technology Strategic Plan Refresh, Business Continuity and Disaster Recovery Refresh and a Security audit. The purpose is to guide the District in future years with planning, procuring, implementing, and managing current and future information technology investments and resources. The objective of this project is to develop and articulate a vision and roadmap for the effective use of technology to support the mission of the District. The District is focused on the proposed IT Strategic Plan as the cornerstone of their efforts to improve the balance between demand for maintaining and enhancing technology and available IT resources (including staffing and funds).

Desired elements of the plan should include, but are not limited to:

1. A comprehensive assessment of existing technologies and staffing that will identify current strengths and weaknesses of existing District information technology and service delivery.

2. Identify opportunities for increased efficiency in District operations through technology:

    a. Include trending technologies as well as recommendations of strategies for continual assimilation of such technologies.
    b. Strategy for implementing innovative technology.
    c. Provisions for continuous IT improvement and sustainability.
    d. Integration or replacement of legacy systems.
    e. Recommendation for IT Investments.

3. Review, assess and recommend IT Governance strategies:

    a. Include staffing recommendations.
    b. Review and recommend current policies as well as gaps in policy.
    c. Decision making recommendations, etc.
    d. Communications provisions for departments, end users, vendors etc.

4. Assess and make recommendations for the District's Systems (including prioritization, risk levels, time to implement, cost, etc.):

    a. Enterprise Systems and System Requirements
    b. Legacy Systems
    c. Networking
    d. Security
    e. Desktop
    f. Telecommunications
    g. Database Architecture Analysis

5. Recommendations for cost savings and efficiencies with respect to available regional partnerships and collaboration strategies. Include any environmental improvements and sustainability (green initiatives).

6. Gap analysis of technology/processes. The District does not wish to limit or dictate what is being proposed but is more interested in a proper and comprehensive Strategic Plan. To that end, GTG may include other elements in the proposal.

Scope of Work and Process

• Conduct a thorough analysis and provide recommendations on the District's current technology operations and environment, including services, infrastructure, staffing, applications, security, funding, workflow processes and business systems.

• Assess the District's current IT Governance structure to ensure that it best supports the District's technology needs through the most appropriate service provision agreements, policies, resource availability and reporting relationships.

• Identify the key internal and external factors; strengths, weaknesses, opportunities, and threats (SWOT analysis).

• Identify existing and available outsourcing relationships and opportunities.

• Conduct an internal and external penetration test. A summary of the results of the penetration test will be provided in a separate document.

• Evaluate and identify additional means and approaches to accommodate current and emerging technology requirements, major trends and upgrades facing the District.

• Assess internal customer needs by meeting with all levels of management and other key technology stakeholders.

• Identify workflow processes to ensure efficient service management and delivery to business units and the public.

• Evaluate and identify IT processes or staffing deficiencies based on a global view of the projects identified both in the updated IT Strategic Plan and the District's ten-year Capital Improvement Plan. Provide an analysis on the expected additional workload and three cost based solutions (Low/Medium/Excessive costs) to address any identified or projected deficiencies along with a pros and cons list for each of the proposals and a recommendation on the proposal the District should consider.

• Include a separate timeline, cost proposal and any other information to assist the District in the evaluation of the project scope and budget to update the District's IT Contingency Plan for Incident Response, Disaster Recovery, Business Continuity and Risk Management. Keep this project response to two pages.

GTG performed an assessment of the District's Information Technology systems and service delivery model. The time spent (some remotely) with the District was used to interview numerous District staff, to review documents, and to review the service delivery of information technology to the core stakeholders.

This process was necessary to compile information that assisted in the overall assessment of the IT functions within the District. The opportunity to review the workings of IT and their staff was important to the methodology used to formulate this report.

A research process was undertaken to compare the existing District service delivery model with industry best practices and to special districts of comparable size and characteristics regarding budget, staffing levels, and supported application systems. This research involved verifying where and how economies and efficiencies can be implemented to assist the District with a goal of improving and streamlining its IT service delivery.

Departments

Numerous District departments, divisions and key stakeholders participated in interviews to assist with information gathering for the assessment of service delivery levels and customer satisfaction with IT performance. These interviews were held via remote question and answer session with the individual departments/divisions and included departmental staff involved with the consumption of IT services.

IT Organization Review

The point of the IT organization review is to assess the District's policies and practices against industry standard criteria to demonstrate that IT has the capacity to deliver IT services.

This was accomplished by remotely reviewing the existing technology systems and infrastructure (documentation) and performing remote interviews with key personnel. The review included an interpretation of the current technology infrastructure. Interviewing the IT service delivery department and review of provided information to assist with the overall assessment.

Information Technology Overview

Information Technology Overview

Infrastructure

The District has a characteristic IT infrastructure for a utility district. The infrastructure is comprised of 16 geographic locations that contain IT equipment within the boundaries of the District. This number is likely to grow as additional infrastructure, sensors, and other equipment at other remote facilities is installed to further the District in its efficiency and data driven decision making goals.

These locations are connected by a wide area network (WAN) with multiple local area networks (LAN) interconnected at the WWTP by fiber optics, and at other locations by digital copper lines, and wireless technology.

The District has a standardized system of HP/Aruba switches and routers that controls the flow of data throughout the WAN using some District owned and maintained wireless connectivity and a primary 250MB bandwidth internet connection via AT&T with backup provided by Spectrum Cable.

Applications

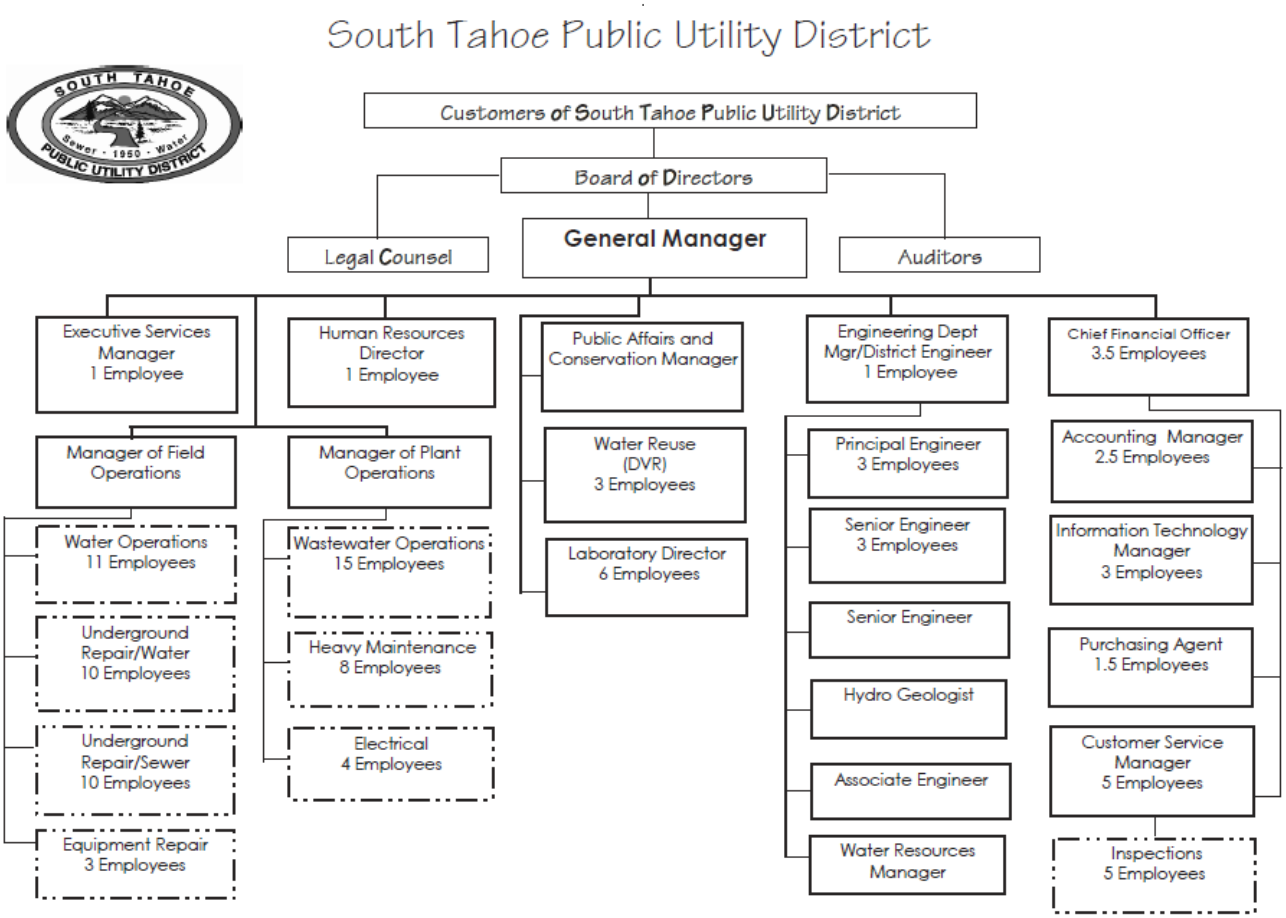
The IT staff provides support for numerous business applications to fulfill the District's business case. These business applications are comprised of both widespread use systems and special systems to address a particular need.

District IT manages and maintains standard software systems for IT and various departments with some specific business case applications where required. The District has implemented Common-Off-The-Shelf (COTS) systems that are widely used in the industry. These systems allow agencies to configure them to meet business needs without the need for customization.

These applications are listed in Appendix B.

Management/Supervision

Current (2022-2023) District Organizational Chart



The Information Technology Department reports to the Chief Financial Officer. The department is comprised of one Information Technology Manager supervising the work of one Network/Telecom System Administrator and two IT System Specialists. The Network/Telecom System Admin supervises the two IT System Specialists.

Staffing

The Districtwide total staffing for IT (Information Technology) service delivery is 4 FTE's, which includes management, applications, and technical support. The District IT supports 124 desktops, 61 laptops, 57 Tablets, 41 printer devices, 11 district-owned iPhones, 36 wireless access points (APs), 47 network switches, 17 scanners, 14 physical servers, and 58 virtual servers with 4 staff. The ratio of IT technical support staff (3) to system "nodes", which equates to 466 network nodes to three staff or 1:155.3 ratio of nodes to staff.

Staffing levels for IT have not been increased over the past 10 years, however the number of devices supported has increased from 389 to 466 in that time period. In addition, the increased complexity of wireless infrastructure and devices for the mobile workforce, as well as new and constantly evolving cybersecurity threats increase support required.

The Municipal Information Systems Association of California (MISAC) conducted a survey in 2012 of its member agencies to determine the average IT staff member to nodes maintained. The survey determined that there was an average ratio of 1:72.4 of IT staff to nodes supported.

The MISAC professional organization was founded in 1980 out of a need for collaboration and data sharing. The membership includes IT professionals from cities, towns, public safety, special districts, and other local governmental agencies. The principal consultants for this report are currently members in good standing of MISAC and can use the resources and data of the organization.

Note that the average ratio of staff to nodes supported calculation does not include the software support and solution delivery currently being provided by the same District IT technical support staff. This includes support for all District software packages, project management during software implementations, as well as business process efficiency automated processes for departments using custom developed Laserfiche forms processes, approvals, and reports to drive a more paperless District.

One of the more obvious resource shortfalls that became evident during the review was the lack of network support staff dedicated to supporting the network connectivity in the district's particularly challenging communication environment. Note that the Tahoe Basin is a much more challenging environment for broadband and wireless communications than other organizations must contend with. This is further complicated by the fact that software providers are starting to require constant connectivity for newer versions of remote capable software modules in place of features that allow uploads of updated information when communication is restored.

It was also determined that due to lack of IT staffing and other resources, IT management staff spend an inordinate amount of time performing duties that are best done by other, lower level, staff. This is not considered a best practice by the industry and most organizations. A department's is best used to oversee operation and staff to facilitate the organization's needs and strategically plan for the District's technology needs. In this way, particularly for IT, this will allow managers to observe where improvements are needed and where innovation can facilitate enhancements to processes.

Having management staff perform these lower-level functions is inefficient and costly. A manager is a highly compensated employee that is better utilized in the role they were hired to do. For example, using a manager as a technician is far more costly than using a staff technician and is not sustainable. A better use of resources is to have staff perform the roles they were hired to do.

IT Processes

The District's IT is responsible for the operation of the District's information technology services, support, and IT infrastructure. The Information Technology Department is organized to provide a flexible, efficient, and effective structure to manage information technology operations and investments to support the District's strategic goals, business processes, and enterprise-wide information needs.

The District has made numerous sound investments in IT over the years. The basic IT infrastructure appears stable and dependable, albeit in need of some upgrading in certain areas and should continue to meet industry standard replacement cycles. End user satisfaction is extremely high, including many major applications as well as with IT support and service, with global recognition that the IT group is understaffed and under resourced. A theme throughout the interviews is that while staff felt that the District has "a much better IT department than an agency our size deserves" and the IT staff are excellent, there are too few of them, they are not crossed trained, and are short on resources.

Despite these staffing challenges, other strengths noted include:

- Following industry best practices
- Earning the MISAC Excellence Award
- Met goals and objectives of 2014 Strategic Plan
- Integration progress has been made to integrate disparate systems, still areas of need
- Doing an outstanding job maintaining customer satisfaction (not sustainable without additional staff)
- No significant issues with core systems

Budget

The District has pursued a centralized strategy with respect to IT investments. The Information Technology Department has a fair amount of latitude in making investment decisions to maintain and support specific technological needs.

In 2012 Priest Consulting (now a part of GTG) conducted a sampling survey of 21 municipal agencies within California to determine the average cost of IT service delivery to their respective entities and the percentage impact to their general fund. Of the 21 surveyed 9 were funded through the general fund directly and 15 were funded by a structured internal service fund. The survey determined that 4.7% was the average cost for IT service delivery for an agency relative to their general and enterprise fund operating budgets. The District's amended operating budget for 2022-2023 is $48,939,577. The IT amended operating budget is $1,485,736 for IT service delivery districtwide, this equates to an approximate 3.04% cost to the District operating budget. The amount of funds the District is expending on technology versus total operating budget is below the average of both Deloitte and MISAC. In a recent study, Deloitte Insights (https://www2.deloitte.com/us/en/insights/topics/digital-transformation/digital- transformation-survey.html) found that most organizations spend on average 3.28% of revenue on IT.

Fund/Category	STPUD Budget	IT Budget	%
Sewer Fund O&M	29,937,705	736,806	**2.46%**
Water Fund O&M	19,001,872	748,930	**3.94%**
Total O&M	48,939,577	1,485,736	**3.04%**

Issues

Issues

"IT Governance is the most important factor in generating business value from IT"

Peter Weill*, Director of the Center for Information Systems Research, CISR, and Senior Research Scientist at MIT Sloan School of Management

*Peter Weill, *IT Governance (Boston Massachusetts: Harvard Business School Press, 2004)*

Organizationally, it is recommended that the District implement several best practices. An IT Governance group has been formed to assist in establishing organizational priorities and the technology budget. This group should meet on a regular basis to address any concerns over IT service delivery and to prioritize IT projects. Along with governance, a detailed IT plan should be updated annually. This group should function as a robust liaison program to foster communication between disparate stakeholders who consume IT resources.

Proper use of IT Governance can leverage the ingenuity of the District's staff while ensuring compliance with the District's mission and guiding principles. Well-designed, well-understood and transparent mechanisms promote desirable IT behaviors, and senior management awareness of how IT governance works. An IT governance framework also has the added advantage of relieving IT from the position of being the sole decision maker of which projects or resources should have priority over others.

To develop a cohesive enterprise information governance discipline requires the work of many individuals and an unambiguous accountability structure to enforce clearly defined information policies and procedures. This becomes more important as technology investment costs rise, innovative technologies rapidly come into the market, integrated information needs increase, and regulatory requirements push organizations to start managing information as a business asset.

IT Governance is defined by five key decision types that specify who should be contributing and who will be authorizing. These decisions are governed by three primary governance mechanisms.

- The first and most visible are the decision-making structures. These are the organizational committees and roles that define where decisions are made.
- The second feature is formal communication and how IT governance decisions are

made in the organization. Along with senior management support, Weill's study found that the more management communicated formally about the governance mechanisms, the more effective the governance.

- The third feature is the alignment processes. This is where input and recommendations are found, and this is where the action occurs. These are the budget process, project tracking, exception processing, and performance measures.

In the centralized IT operating model, all IT infrastructure and application services throughout an organization are delivered by a single internal IT organization. Innovation and efficiency are the desired goals of the IT system in every organization. In general, the centralized approach can promote a more efficient and controlled organization.

The ability to improve service delivery and uptime is often tied to technological advances and process improvements. From an IT perspective, business agility is often a product of streamlined decision making based on greater visibility to necessary data. It is considered a best practice for policy and governance to be centralized for optimum security and compliance.

Outlined below are issues and trouble areas uncovered through research and remote information gathering in response to the initial questions put forward by the District's request for proposal.

The key issues revealed in this report point to a need for:

- Consider change in reporting structure to give IT a "seat-at-the-table"
- Improving staffing levels within IT based off industry standards
- Improve network and wireless connectivity to all locations.
- Organizational IT Governance should be improved and enhanced
- Include software in asset replacement schedule
- Training for both IT staff and end users is a pain point
- Undertaking a comprehensive business process review across the organization
- Improving utilization of existing ERP (Tyler New World)
- Improve access to permit information
- Instituting better file management and document sharing
- Establish regular updates and patching to the virtual server farm system
- Institute Change Management initiative using outside subject matter experts
- Utilize outside subject matter expertise to address user needs
- Improve and expand public access to online services
- Evaluating the use of Cloud services when robust communications are in place
- Evaluate the expansion of Broadband to support, the Internet of Things, Smart District Technologies, and Innovation
- Expand cyber security to include all facets of District technology
- Evaluate GIS for centralization under IT

Recommendations

The data collected for this report leads to several pertinent recommendations as to how the District should proceed in the future with IT service delivery.

The most relevant conclusions and recommendations (in no particular order) are:

- **Improving staffing levels within IT based on industry standards.**

Recommendation: Increase staffing levels within IT to meet demand for services and assistance from stakeholders within the organization. All of the departments and divisions stated that IT does an excellent job with the resources available but need more to accommodate the District's growing needs. They also noted that in many areas there was only one staff member to provide support, and that support suffered greatly if that staff member was out. To this end, an increase in staff and resources is imperative. We recommend one Network/Security Analyst and one Business Systems Analyst to support the findings of our assessment. This will assist the District in aligning with industry standard staffing levels and average budget ratios per MISAC, and Deloitte as mentioned above. Specifically, the additional annual cost for salary and benefits of these two positions is estimated to be approximately $335,000. Adding this amount to both the 2022/23 amended IT operating budget and the total amended district operating budget brings those totals to $1,820,736 and $49,274,577, respectively. This increases the IT budget to 3.69% of the total district operating budget, which is slightly above the Deloitte budget ratio (3.28%) and well below the MISAC budget ratio (4.7%) mentioned above. This proposed staffing increase also improves the ratio of technical staff to supported devices from the current 1:155.3 ratio of devices to technical staff to 1:93.2 ratio of devices to technical staff, which approaches the 1:72.4 device to staff ratio found in the MISAC survey mentioned previously.

According to the American Water Works Association publication 2021 AWWA Utility Benchmarking: Performance Management for Water and Wastewater, the average water/wastewater utility with 100 to 125 total full time equivalent (FTE) staffing has 6.5 to 7.5 FTE's in IT and IT Security combined. The proposed staffing increase would bring the District's IT staffing level to 6.0 FTE's.

In addition to adding staff positions, the district should update its job descriptions to include a growth path beyond a I/ II level to at a minimum of III and possibly an IV level or other compensation that is tied to performance criteria like maintaining current certifications. This would provide a succession plan for retaining key talent in IT.

Over 70 new projects have been identified in this strategic plan refresh, and to make progress on about 20 of those new projects, adding these new positions is critical. The addition of a Business Systems Analyst would benefit at least 10 of these new projects including improving efficiency through digitizing more agency processes with forms, creating more public facing forms for customer service improvements, and conducting a business process review of district processes to improve efficiency across the agency. The addition of a Security/Network Engineer would benefit at least 12 of the new projects including critical security and network

projects for implementing multi-factor authentication and geo-fence authentication to enable secure remote access to SCADA (Supervisory Control and Data Acquisition) and other District resources, as well as needed improvements in remote network access for staff, vehicles, and assets.

Network Security Analyst I/II/III

As noted above there are multiple projects that would benefit from the addition of a Network Security Analyst, in addition to providing redundancy in staffing to cover for vacations, sick leave, etc. Some of these projects include existing expansion of devices and communications in the field that take a considerable amount of time to add and then maintain. The agency also has projects inline such as implementing Manage Engine and switching from ESET to Crowdstrike endpoint protection for greater cyber threat protection. These two projects require additional resources and subject matter expertise.

The most important need for the position is to focus on the organization's security aspects. A recent security audit's outcome rated the agency's external security in place at above average, but the overall rating is below average due to the constant addition of security threats that appear on a daily basis, the need for internal configuration improvements, SCADA devices moving to the IP protocol, and agency-wide phishing attempts/attacks (current staff education on phishing should continue). Overall, the agency's security threat was slightly below average after performing the recent security audit, however ensuring similar audits occur regularly will ensure the agency transitions to an above-average rating. The agency's security systems, while in place, were not entirely configured and/or monitored effectively. The latter being due the agency's security operations center (SOC) vendor. The security audit also recommended that systems are cataloged to assist in keeping systems up to date from a security posture and to sundown/retire systems that pose a security threat in a timely manner. The Network/Security Analyst would assist in configuration and oversight of the agency's security programs and vendors.

The addition of the Network Security Analyst would also allow the agency to improve on the Gartner maturity scale of a Break/Fix agency to one that more proactively (instead of reactively) plans for, resolves and avoids issues before they can impact the agency.

The report *Cost of a Data Breach 2022* by IBM states that for 83% of companies, it is not if a data breach will happen, but when. Usually more than once. When detecting, responding to, and recovering from threats, faster is better. The average cost of a single data breach in the United States is over nine million dollars. Investing in a security position to reduce this risk is a solid business decision.

Business Systems Analyst I/II/III

Also noted above there are multiple projects that would benefit from the addition of a Business Systems Analyst, (in addition to also providing redundancy in staffing). Most of these projects focus on analyzing and improving agency-wide business processes to improve enterprise systems in order to increase efficiency and enhance customer service, while other project recommendations focus on improved field access to data collection and retrieval to also

increase efficiency of staff and decrease travel time and energy use.

In addition to improving enterprise systems, this position would be responsible for continued maintenance of configurations, troubleshooting issues, training District staff on better use of existing systems, and project management while implementing new system features in both existing and newly implemented enterprise systems. This position would become an interface between IT and District staff to better communicate the District's needs for utilizing technology available to staff. By understanding the business case of the department, this position will know the use cases of technology within the department and how to best utilize all the available features. This position will also need to train staff in the most efficient use of technology and will have the ability to make recommendations on alternatives or replacements to existing technology to drive adoption and ensure the technology works for staff. Lastly, making sure the needs and deliverables to the different business units are met when implementing innovative technology. This position will drive adoption and efficient use of technology that enables both quick and secure access to data that staff need, but also enables the District to further its data collection efforts and being able to make efficient, data-driven decisions for the organization because of the level of adoption from the rest of the staff.

- **Improve network and wireless connectivity to all locations.**

Recommendation: Improve network and wireless connectivity to all district locations and district-owned mobile devices. One of the goals outlined in the 2022/2023 budget is to "Maximize appropriate use of technology to improve operational efficiency and prioritize asset replacement." In most of the departmental staff interviews the concept of making better use of staff time, fuel, and obtaining better information faster through remote sensing of and communication to remote equipment by no longer relying on a human needing to "smell," "hear," or "see" something that indicates a problem. This is inefficient in an environment with over 80 remote pieces of equipment spread throughout the District. Cost savings realized by reduced fuel use and a reduction in non-productive person-hours spent driving to remote locations would potentially offset part of the cost for mobility tools, security, and communication improvements. A broadband initiative should be funded and undertaken to improve communication to this remote equipment and all district locations and mobile devices.

- **Consider change in reporting structure to give IT a "seat-at-the-table"**

Recommendation: Consider changing the organization's reporting structure to give the Information Technology Manager a "seat-at-the-table" in the Executive Team. Agencies with IT networks and systems as complex as the District's typically use an organizational structure that allows the IT Manager (or Chief Technology Officer) to have a" seat-at-the-table" in the Executive Team structure, often reporting directly to the General Manager. This allows the agency to consider any IT issues that may be related to a pending executive decision during the decision-making process. This is more efficient and helps ensure that efforts are not well underway before an IT issue requires rethinking of a selected approach.

Technology touches every aspect of our lives and businesses in today's world. In the private

sector, it is standard practice that the technology team is a strategic decision maker with a seat at the table. During interviews with departments during the discovery process, multiple departments asked for IT to take the lead on suggesting innovative technology, because they "don't know what they don't know." In addition to the need for innovation, bond ratings and insurance needs are starting to be impacted when the technology team is not a department. The reasoning is that if IT does not report to the CEO, then the agency is not taking security seriously. Cyber risk needs to be communicated to and from the highest level. When elevating IT to a Department, the name should be changed to the Department of Innovation and Technology as a leader in innovation for the agency and as the chief security department in charge of strategy to protect the agency's security interest. The head of IT should set the strategic direction for an agency. IT is no longer just printer and desktop support.

Industry experts Susan Leung, Vice President Alliant Insurance Services and Omid Rahmani, Associate Director, US. Public Finance has suggested that cyber and event risk is impacting bonding; and cyber warfare may impact insurance coverage being withdrawn due to the volatility. Organizations should mitigate and transfer this risk. Key security controls and mandatory, periodic security training should be put in place. Security controls include a disaster recovery and business continuity plan, multi-factor remote access, endpoint protection, segregation of backups, encryption, zero trust access replacing VPN in addition to elevating the Chief Security Officer/Chief Technology Officer to directly report to the CEO. A budgeting roadmap for security controls shows an agency is serious about security.

- **Training for both IT staff and end users has become a point of pain.**

Recommendation: Training for both IT staff and end users was a request in every interview conducted by GTG with District staff. There is a global need within the organization to improve the use of systems and applications through improvement of users' skillsets. This need can be addressed through more specific training by either a new, on-staff, IT trainer or by utilizing outside training resources, this may require a budget adjustment.

- **Undertaking a comprehensive business process review across the organization.**

Recommendation: Using an outside subject matter expert, conduct business process reviews (BPR) to enhance technology systems use within the organization. It was made apparent during our interviews with District staff that comprehensive BPR was not done for most, if not all, technology implementations. This is an important process that will ensure that technology is addressing the business needs of a particular area. The recommended steps to ensure this process enhances the district in the best possible manner, the agency should create and recruit a Business Systems Analyst position and then perform the business process review.

- **Improving the utilization of the District's existing ERP system (Tyler New World).**

Recommendation: Improve the New World ERP by implementing modules deemed business necessary, such as possibly implementing the Human Resources/Payroll module if an IT Governance decision making process determines this to be the best alternative. There was an apparent need for more training for users to help them use the system to its fullest potential. Consideration should be given to using an outside resource to review the existing New World

system and to discover ways to improve how it is being utilized. One such resource is the non-profit consulting arm of the Government Finance Officers Association (GFOA) that has assisted many organizations with this particular issue.

- **Improve access to permit information**

Recommendation: Improve access to district permit and connection information. Much of this exists only in paper records as well as images only (non-searchable) linked to geographic information stored in the district's GIS system. As mentioned previously, a comprehensive business process review, with suggested changes to how permit and connection information is accessed, is strongly recommended.

- **Instituting better file management and document sharing (OneDrive/SharePoint).**

Recommendation: Expand the Microsoft 365, OneDrive, and SharePoint systems to enable collaboration and document sharing. It is advised that the District retain a SharePoint subject matter expert to build sites that can enable network file sharing and collaboration. The use of OneDrive for individual users' documents is also recommended to assist with workflow. SharePoint can be configured to become the repository for institutional knowledge and Standard Operating Procedures (SOPs) to collect institutional knowledge (such as from potential retirees), allowing mobile device access with look up for SOPs for equipment and procedures as well.

- **Establish regular updates and patching to the virtual server farm system**

Recommendation: To ensure that industry best practices are being adhered to, the District's virtual server systems should be patched and updated to the most current versions and builds. This will assist the District's cyber-security initiative as well as assure confidence in the overall stability of the data system. By keeping these systems, both VMWare and servers OS, up to date the overall goals of the District's data center systems will provide a high degree of constancy.

- **Change Management initiatives**

Recommendation: Change Management is a systematic approach that includes dealing with the transition or transformation of organizational goals, core values, processes and/or technologies. The purpose of every organizational change management initiative is to successfully implement strategies and methods for effecting change and helping people to accept and adapt to change. Implementing change requires a preparation phase, a proper internal communication plan, training programs, and evaluating the program's success. A Change Management initiative should be created by engaging a subject matter expert to guide a process driven program.

- **Utilize outside subject matter experts to address user needs.**

Recommendation: Whenever a technology implementation or issue is outside the skillset of IT, it is advised that an external resource for subject matter expertise be retained to assist the division with the application. The industry standard to determine if an outside resource is needed is to perform a resource analysis to evaluate and develop projects. Using this method will ensure that the use of an outside resource is the best course of action. It is also imperative that whenever an outside resource is used that a "knowledge transfer" at the end of the project is performed. An annual budget amount of $100,000 to $150,000 is typical for an organization of the size and complexity of the district. By regularly budgeting for this professional service, IT is able to draw upon the resource when needed to address needs in a timely manner.

- **Enhance IT Governance to help the decision-making process for IT.**

Recommendation: The district has an IT Governance to assist the organization with its IT decision making. Information Technology Governance is a process used to monitor and control key information technology capability and decisions to ensure the delivery of value to key stakeholders in an organization. Examples of district organizational decisions that benefit from a formal IT Governance process include determining the correct level of SCADA control available in the field and determining whether migrating district payroll to Tyler New World is the best alternative. Examples are provided in Appendix A. GTG recommends continuing to use the governance committee and expand its use for communication on IT project status and an annual IT Strategic Plan review to confirm what was agreed up and consider new projects that may have been needed they may impact existing budget or scheduling.

- **Hardware and Software asset replacement**

Recommendation: The agency does currently follow industry best practices regarding infrastructure and equipment. To improve upon the District's current practices, it is recommended that software assets should be added to the asset replacement schedule.

- **Improve and expand public access to online services.**

Recommendation: In the Customer Service area, there are a number of forms that are not available to the public. It would increase efficiency and convenience for district customers to be able to submit anything online that is currently available when visiting the Customer Service Center in person. The agency should also make use of forms with field crews, accounting, the agencies external portal license, Laserfiche extension, for adding to website.

- **Expand cyber security to incorporate every facet of District technology**

Recommendation: Implement multi-factor authentication and geo-fencing to improve security. This would enable more secure mobile access to the Districts data without compromising safety. Enforcing better security of the District's data and ability to block cyber-attacks. This will allow field operations staff access to programs and data from mobile devices in a safe and secure manner. This will result in reducing "time behind the wheel" for field staff. As mentioned previously, cost savings realized by reduced fuel use and a reduction in non-productive person-hours spent "behind-the-wheel" would potentially offset part of the cost for expanded cyber security.

AB2135 covering Information Security mandated California state agencies to adopt the National Institute of Standards and Technology security guidelines. We anticipate this being passed down to cities and special districts in the future. A section of the standards includes completing a security assessment every two years. The audit has been compared to doing a financial audit. The purpose is not because an agency is doing anything wrong, but to verify you are on track and the latest security measures are in place.

- **Evaluating the use of Cloud services.**

Recommendation: Develop policies, standards, and conditions to evaluate all software purchases including options to implement software as a service. Cloud services, for local government, usually include storing information on a remote server using shared services, where a number of agencies share access to resources owned and managed by a cloud vendor. This model for cloud service is referred to "Software as a Service" or SaaS. This initiative will be dependent on the connectivity between District sites to enable reliable data flow in a robust manner and a high-speed reliable redundant internet connection.

- **Evaluate GIS for centralization under IT.**

Recommendation: GIS should be evaluated for centralization under IT based on industry standard best practices. GIS assists the District to collate and analyze the quantities of data needed to address many issues and across all the various departments. GIS cuts across nearly all disciplines, provides a common language for discussion, and acts to bring governments, agencies, and constituents together in the decision-making process.

Other areas of note

An attempt was made to look at the number and complexity of applications supported by the various districts in California. It was determined that there is such a wide and varied complexity between districts that a logical determination was not possible.

Looking at the number and complexity of applications supported by the District it is the opinion of GTG that they are not significantly out of the norm for a special district. It was, however, made apparent through the interviews with stakeholders, that the Information Technology Department staffing, and resources are below what is typically adequate to support an organization of the District's magnitude.

. Having management staff perform these lower-level functions is inefficient and costly. A manager is a highly compensated employee that is better utilized in the role they were hired to do. For example, using a manager as a technician is far more costly than using a staff technician and is not sustainable overall. A better use of resources is to have staff perform the roles they were hired to do.

If the staffing status quo is maintained, what recommended changes can be implemented to improve IT service delivery Districtwide. This option is not viable nor sustainable. Without additional resources the risk of delays in service and upgrades may eventually lead to a security breach, or a customer department attempting to "by-pass" IT in an effort to meet their technology needs. This "Status Quo" continues to strain both IT and stakeholders moving forward and could possibly lead to increased costs and inefficient "rogue" IT systems.

Lastly, during interviews, the discussion of assuming the Tahoe Keys water district was brought to our attention. This document considers the current workload and device/asset management for staffing recommendations. If the Tahoe Keys district becomes part of STPUD's oversight, staffing, security, SCADA, and planning for an integration of technologies should be revisited and planned for with the head of IT included in the discussions.

Future Projects Matrix

Strategic planning is an organization's process for defining a strategy so that they can accomplish specific goals and objectives. Strategic planning is utilized on a large scale, such as planning for growth over several years or to help an organization reach its stated mission.

While strategy looks at why certain steps should be taken, a plan outlines how to enact those steps. Strategic planning marries these two concepts to determine the best possible course of action. Appendix C is a matrix that lays out project objectives that have been brought to light during the strategic planning process to help the organization bring into focus actions that should be proposed to accomplish the purpose of this strategic plan.

It should be noted that these proposed projects are not to be considered a complete list but

rather a starting point for moving forward. An organization should always stay agile with its

needs and priorities, which can change as accomplishments are achieved. With this in mind, the matrix should be considered a starting point to improve the state of information technology within the District and to advance the service delivery model for the IT Department.

Acknowledgements

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The management and staff of the various departments that shared their opinions and knowledge, District has truly outstanding employees.

The IT Department for their time and cooperation through interviews and information gathering.

The Municipal Information Systems Association of California (MISAC) and its members for their efforts to share their information and time discussing their internal information.

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Appendix A – Governance Structure

The following is an example of best practice for governance in a local government setting.

IT Governance Decision Matrix			
	IT Officer	**ITBC**	**ITEC**
IT Principles & Policies	Reviews/Recommends		Decides
IT Architecture	Decides	Gives Input	
IT Infrastructure	Decides	Gives Input	
Business Applications	Reviews/Recommends/Decides[1]	Gives Input	Decides[2]
IT Investment	Reviews/Recommends/Decides[1]	Recommends	Decides[2]

(1) The IT Manager may approve investments and applications below the $10,000- or 40-hour thresholds. Project Request Forms should be submitted for projects above these thresholds. A service desk ticket should be created for requests below these thresholds.

(2) The IT Executive Committee approves investments and applications above the $10,000- and 40-hour thresholds and is the sounding board for small projects not approved by the IT Department.

Roles of I.T. Governance

Information Technology Executive Committee (ITEC)

The ITEC leads the District in defining and managing the business requirements of the District. The committee supports the development of enterprise information strategies, high-level policies, and standards; overseeing information technology investments; and creating a secure and efficient information management environment. This must be done in the proper context of business strategies and operational requirements. In discharging its responsibilities, the Committee shall have the sole authority to, and shall, do the following:

- Develop annual IT Business Strategy
- Approve Technical Standards
- Set and provide commitment to IT Principles
- Identify business needs that are candidates for technology solutions
- Review, authorize, sponsor, and prioritize enterprise technology efforts
- Recommend to the District Manager Technology CIP and special Operating Budgets
- Stay abreast of project progress and resolve high level issues
- Resolve Escalation items between IT and Departmental Request

Desirable Behaviors:

- ✓ Holistic view of business and IT
- ✓ Identify strategic technologies and standards
- ✓ Consider IT as another business investment
- ✓ Reduce Costs

- ✓ Improve Customer Service
- ✓ Enhance internal and community communications
- ✓ Centralized Purchasing
- ✓ Standardized Project Methodology

Information Technology Officer:

The Chief Technology Officer chairs the ITEC and makes decisions on IT architecture and infrastructure. The IT Officer is responsible for providing input and recommendations for the use of modern technology (hardware, software, and policy) and better use of existing information assets. The IT Officer will work with the ITEC and Executive Management Team to provide education, strategic direction, coordination, and support for the technologies needed for an enterprise information framework.

Membership

The IT Executive Team is composed of representatives from the District Manager's office, Finance, and IT Directors, and two to four representatives of the executive management team.

Information Technology Business Committee (ITBC)

This ITBC will meet on an as needed basis and be responsible for giving input on IT Architecture, IT Infrastructure, Business Application needs and developing cost benefit analysis at the direction of the ITEC.

Committee Roles

1. Research and analyze process improvement initiatives
2. Recommend common platforms, standards, and infrastructure changes
3. Communicate strategic project management updates
4. Help to identify and coordinate enterprise technology needs
5. Understand the basic levels of technology and impacts on integration
6. Technical exchange of information
7. Conduct research and/or gather resource requirements requested by the ITEC
8. Demonstrate the improvements in business processes expected from proposed technology

Desirable Outcomes

1. Provide Summarized Business Analysis to ITEC
2. Enhance Customer Communications
3. Communicate Strategic Plan and updates to Departments
4. Assist Business Units to see benefits rather than inconveniences

District
Information Technology Executive Committee
Charter

The Information Technology Executive Committee (ITEC) is responsible for aligning Information Technology, innovation, and social media activities with the District Board goals and District of Concord's strategic vision, mission, and objectives.

I. Purpose

The ITEC has been established to identify and prioritize major technology projects, initiatives, proposals, recommend organization IT best practices, and to assist with IT strategic planning. In doing so, the committee serves as a major coordination and communication vehicle among departments.

II. Committee Structure

The ITEC consists of the District Manager or designee, Director of Information Technology, Finance Director, and Directors of District Departments that are actively engaged in the application of information systems to fulfill their business needs.

The District Manager or designee will be the committee sponsor/champion. The Director of Information Technology will chair the committee and serve to provide counsel to the committee.

The ITEC is to set overall District information technology direction with the goal to achieve maximum benefit within the allocated resource levels. This effort warrants direct participation by the Department Directors. If a Director cannot attend the meeting, they are not to send an alternate. Directors may bring their staff to the meeting to discuss specific items. In addition, other staff may be requested to participate as appropriate.

III. Procedure

1. The ITEC meets during the budget process and as needed for mid-year requests or as called by the committee sponsor or chair.

2. The ITEC, on recommendation from the Information Technology Department, reviews and makes recommendations to the Committee on matters related to all District Information Technology projects and may include the following:

    - Information Technology mission, strategy, and long-range plan
    - Annual budget and long-term priority setting for new and ongoing projects
    - Standardizing hardware and software
    - Funding recommendations
    - Best Practice recommendations
    - Interdepartmental coordination

3. Committee members may be assigned specific tasks or may provide presentations to clarify

project definition, to commit and schedule their department resources (personnel and equipment) to timely completion of reviewing project requests and making recommendations in an enterprise manner on matters before the Committee.

4. District information technology projects planned for the annual budget approval process or initiated during the course of the year will be submitted to the ITEC for review. The committee will recommend a course of action to the District Manager and the initiating Department Director of projects that are consistent with the District's information technology long range plan and strategy.

5. The Information Technology Department provides a list of Information Technology projects for review and prioritization by the Steering Committee. The information provided will include an estimate of the Total Cost of Ownership representing costs required to accomplish each project and to maintain each solution for a period of 5 years. A formal project submission form and approval process by the ITEC is required before information technology projects are undertaken by the District.

ITBC Charter Example

District
Information Technology Business Committee
Charter

I. Purpose

This team will meet at a minimum on a quarterly basis and be responsible for giving input on IT Architecture, IT Infrastructure, Business Application needs and developing cost benefit analysis at the direction of the ITEC.

The ITBC has been established to provide regular updates on major technology projects and initiatives, evaluate technology IT best practices and provide recommendations to the IT Executive Committee, and to serve as a technology operations coordination and communication vehicle among departments.

II. Committee Structure

The ITBC consists of the *(insert appropriate IT Operations Lead/Manager title here) or* designee and at least one staff member from each District Department that has a good technical understanding and is actively engaged in the application of information systems to fulfill their business needs. It is anticipated larger departments may have multiple members on the committee.

The IT Director or designee will be the committee sponsor/champion. The *(insert appropriate IT Operations Lead/Manager title here)* will chair the committee and serves to provide counsel to the committee.

The ITBC Committee Roles include:

- Research and analyze process improvement initiatives
- Recommend common platforms, standards, and infrastructure changes
- Communicate strategic project management updates
- Help to identify and coordinate enterprise technology needs
- Understand the basic levels of technology and impacts on integration
- Technical exchange of information
- Conduct research and/or gather resource requirements requested by the ITEC
- Demonstrate the improvements in business processes expected from proposed technology.

Desirable Outcomes

- Provide Summarized Business Analysis to ITEC
- Enhance Customer Communications
- Communicate Strategic Plan and updates to Departments
- Assist Business Units to see benefits rather than inconveniences

Appendix B – User Applications, Technology and Tools Supported by IT

IT staff provides support for numerous Districtwide business applications. These business applications are comprised of both general use systems and special systems to address a particular need.

Application	Vendor	Purpose
Access	Microsoft	Store drinking water well production
ArcGIS / ArcSDE	Esri	Graphic Information Systems
AutoRead	Sensus	Water Meter Management
BridgePay	AMS a division of Core	Process Customer Payments Online and over the telephone
Exchange Online	Microsoft	Email System
Fleet Anywhere/Asset Solutions	Asset Solutions	Heavy Maintenance Operations
Labworks LIMS	Labworks	Laboratory Information Management System
Laserfiche	ECS	Document Retention and Management and Process Automation and Data collection solution
Maintenance Connection	Accruent	Computerized Maintenance and Management System and Facilities Work Order System
Mitel	Mitel	District-Wide Phone System
Neogov	Neogov	Employment Recruitment
Paradox	Borland	Store drinking water well production
PlanetBids	PlanetBids Inc	Online Bid Distribution Software
RemitPlus	Jack Henry	Bulk Check Processing
RemitPlus	ProfitStars	Remittance Processing
TokaySQL	Tokay Software	Cross Connection Management
Tyler Cashiering	Tyler	Cash and Credit Card Receipting System
Tyler Content Manager	Tyler	Document Management for Documents in ERP software
Tyler eSuite	Tyler	Self-Service Portal for A variety of Modules in the Tyler new world ERP software.
Tyler Forms	Tyler	Standard Form Template for Documents Produced by new world ERP that get automatically saved in Tyler Content Manager
Tyler New World	Tyler	Financial Management
VMWare	VMWare	Virtualization of Server Infrastructure
WaterSmart	WaterSmart Software Solutions Inc.	Collect, Analyze, Correlate and Store Customer and Water Use Data

Word Press	GoDaddy	Website
Workforce Now	ADP	Human Resources, Benefits Management, Payroll, Timekeeping

Appendix C - Future Projects Matrix

The following is a matrix that lays out project objectives that have been brought to light during the strategic planning process to help the organization bring into focus actions that should be proposed to accomplish the purpose of this strategic plan. It should be noted that these proposed projects are not to be considered a complete list but rather a starting point to improve the state of information technology within the District and to advance the service delivery model for the IT Department.

Fiscal Year 2023-24

Project Number	Project Description	Estimated Cost ($ in thousands)	FY 23/24				FY 24/25			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	FY 2023/2024									
T3	New Business Process Analyst	150-175 annually								
T11	Expand cyber security to include all facets of technology	TBD								
T10	Establish regular updates and patching to the virtual server farm system	0								
A1	New Helpdesk System (also a Service Delivery Project)	10-15 annually								
SEC18	Security Project	15-20								
D8	Include software in asset replacement schedule including upgrade	Internal cost								
SEC3	Security Project	14-20								
SEC1	Security Project	10-15								
D4	IT Department Reorganization	Internal cost								
T14	Adopt new IT Project Framework with more input from ITEC	Internal cost								
T5	Mobile SCADA	TBD								
SEC10	Security Project	Budgeted								
A2	Internal Forms Automation	TBD								
A13	Replace CMMS System	Budgeted								
D2	Broadband Master Plan	80-100								
T4	Desktop Replacement	1-2 per unit								
SEC12	Security Project	Internal cost								
SEC15	Security Project	Internal cost								

Appendix C – Future Projects Matrix – Continued

Fiscal Year 2024-25

Project Number	Project Description	Estimated Cost ($ in thousands)	FY 24/25				FY 25/26			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	FY 2024/2025									
SEC2	Security Project	Internal cost								
T9	Implement redundant internet connectivity	1-2 plus monthly cost								
S3	New Network/Security Tech Support Staff	150-175 annually			`					
SEC19	Security Project	1-2								
A11	Digitize evaluation process	TBD								
T7	Computer Room Improvements	10-100								
A27	Vehicle Tracking	TBD								
D7	Organizational IT Governance should be improved and enhanced	Internal cost								
SEC17	Security Project	TBD								
SEC8	Security Project	Internal cost								
SEC11	Security Project	Internal cost								
SEC13	Security Project	Internal cost								
D3	Dig Once Policy (IT)	15-20								
A7	Systems Integration Study	10-15 per integration								
SEC16	Security Project	TBD								
D6	Operational Technology Assessment Plan	Internal cost								
A22	Improve Usage of SCADA	TBD								
SEC5	Security Project	18-25								
SEC14	Security Project	Internal cost								
S5	Increase Funding of IT Department to Industry Standards	TBD								
A3	Public Facing Forms Automation	TBD								

Appendix C – Future Projects Matrix – Continued

Fiscal Year 2025-26

Project Number	Project Description	Estimated Cost ($ in thousands)	FY 25/26			
			Q1	Q2	Q3	Q4
	FY 2025/2026					
T8	Evaluate use of Cloud Services	Internal cost				
A23	IoT Improvements	TBD				
SEC6	Security Project	8-14				
S4	Training	25-50				
A4	Lab Information Management System (LIMS)	TBD				
A12	Water Data Analysis Improvement	15-35				
A18	Expand Laserfiche to include other types of documents	TBD				
SEC7	Security Project	Internal cost				
A5	Online Permitting and ability to track	TBD				
A21	Dashboard for IoT, Big Data and Data Analysis	TBD				

Appendix C – Future Projects Matrix – Continued

Fiscal Year 2026-27

Project Number	Project Description FY 2026/2027	Estimated Cost ($ in thousands)	FY 26/27			
			Q1	Q2	Q3	Q4
T6	Upgrade Luther Pass Communications	TBD				
T2	Improved Communications in Field	90-120				
A17	Convert Microfiche and Paper docs to Laserfiche.	TBD				
T1	Update Field PLC's to IP	TBD				
A19	Implement Public Records Act (PRA) Management System	TBD				
D1	GIS Assessment Plan	40-75				
S2	Market the IT Department and its Services	Internal cost				
A10	Tyler cashiering Integration with Lab	TBD				
A26	Further automate AP Process	TBD				
D5	Migrate Payroll to New World/Improve use of New World ERP	Internal cost				
A20	Automate Form 700 Process	7.5-10				
A28	Institute better file management and document sharing	TBD				
A8	Chamber Upgrade: Agenda Management System with minutes	150-300				

Appendix C – Future Projects Matrix – Continued

Fiscal Year 2027-28

Project Number	Project Description	Estimated Cost ($ in thousands)	FY 27/28				Future Years			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	FY 2027/2028									
SEC9	Security Project	Internal cost								
SEC4	Security Project	15-25								
SEC20	Security Project	Internal cost								
A14	Long Range Budget Forecasting	80-150								
A25	Perform a Business Process Review (BPR)	40-60								
A16	Chromeleon by Fisher Scientific Integration Fix	TBD								
S7	Institute change management initiative using outside subject matter experts	TBD								
A9	Digitize Plan Review Process	TBD								
A24	EADOC Replacement	TBD								
C1	Financial/budget transparency	20-50								
A6	Contract/Bid/Procurement System	TBD								
A15	CAFR prep software	30-100								

Note: The 4th and 5th have fewer projects shown initially. It is assumed the pending security audit will result in additional projects that will make this workload equal to the first three years in addition to other needs that will be discussed annually during tactical updates.