

SAN BENITO COUNTY

# INFORMATION TECHNOLOGY (IT) 2016

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INFORMATION TECHNOLOGY DIVISION  
DEPARTMENT OF INTERNAL SERVICES



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## Plan Overview

Like many governments faced with growth in demand for services while confronting a strained budget, our county continues to surpass significant challenges and new opportunities where technology innovation is essential. These challenges and opportunities are fueled by expectations from the county's constituents and business community to interact and conduct business with the county utilizing technology and web-based capabilities that enhance information, communication and transactions. Through the use of technology our county is able to provide variety of formats to enable transparency, access, engagement and open government. In an environment of rapid change and the need for responsiveness highlights the importance of thoughtfully considered deployment of IT trends that embrace supportable standards.

The Information Technology (IT) Division is committed to excellence and to ensure the business of government is efficient by providing an infrastructure and systems that are reliable, long-term, financially viable and secure. In the past couple of years the IT division has struggled to provide this quality of work and security, due to the limited source of staff and aging hardware throughout our IT infrastructure. Over the past years our infrastructure is rapidly becoming outdated and unsupported therefore the county has become more exposed to cyber-attacks, spam exposure and systems crashes. This ultimately results in employee downtime, impacts public county services and in some cases State services.

This county IT Plan is focused on principles, investments and strategies, and is organized in five sections:

- History of San Benito County Information Technology Division
- State of the County Infrastructure Today
- Staff
- Direction of the Industry
- Productivity Benefits

## History of San Benito County Information Technology

Ten years ago San Benito County created the Information Technology (IT) Division under the Internal Services Departmental umbrella. The initial mandate was limited in scope; unify the existing network infrastructure, deploy new computers to general fund departments, implement enterprise wide services (e.g. file storage, backups, and anti-virus). The City of Hollister's IT Manager (Bob Davidson) was brought in to facilitate the creation of the new division and by August of 2006 San Benito County had its first employee.

In John Shelley's nine year stint with San Benito County he planned and implemented the vast majority of the projects we undertook. When he was hired, the state of the existing infrastructure in San Benito County lacked consistency in design, and functionality was typically at a small business or home office level. From the moment Mr. Davidson and Mr. Shelley began creating County IT they did so with an eye to enterprise level infrastructure on a rural county budget.

Initial investments focused on a fiber based local area network connecting the various county offices with minimal latency and high speed connectivity back to the core file servers. This set the tone for further centralization in the coming years including; login and security, domain name services, email, anti-virus, backup, storage, and virtual machines. Much of that initial infrastructure is still in place today, and the time spent doing it right has saved the county countless hours of work.

By developing an IT Team in house this eliminated the need to outsource the County's IT needs to consultants. Resulting in a more reliable, affordable, and secure network. The second phase departments that began to come online after the hiring of another full time employee (Nathanael Lierly) saw marked

improvement in uptimes and capability. The road was often rocky and sometimes it took real world results for individual departments to realize how valuable having internal staff responsible for their IT needs was.

In the next few years a five year plan was created, the scope of work was expanded (to include software installation, and support for department applications), the phase three departments (Behavioral Health and HSA) were brought online, and the department expanded again. Hiring and retaining helpdesk talent proved challenging for the division, and with the retirement of Mr. Davidson San Benito County sought to replace him with a full time employee.

When Ray Espinosa was hired in 2009 we were experiencing significant growing pains technologically. The email solution we'd relied upon for years was failing more and more often, and our internet connection was insufficient for the number of users we had. Mr. Espinosa's decades of experience and dedication to customer service excellence proved the perfect complement to staff's technical knowledge and in a relatively short span of time the County had a path laid to true enterprise level services.

Staffing continued to be difficult, however with the help of the various programs of our Community Services and Workforce Development department we were able to bring in paid interns to supplement and compliment full time staff. These individuals did everything from answering phones to assisting in deployments of hardware. Eventually some of them even became full time County IT staff, and went on to successful careers as IT professionals.

The expansion of the department coincided with another addition to the scope of County IT's tasks as we took on improvement of the existing financial system. With oversight from the County Auditor IT sought to address some major issues with a failed upgrade to a more current version of the then outdated system. The process had some limited success, however in the long run it was decided to look toward an entirely new financial system – one that could meet the overall County's needs and move us closer to a paperless purchasing and human resources workflow. Nathanael moved from working part time on fixing the old system to focusing full time on assisting in finding, selecting, and implementing its replacement.

The projects for County IT continued during this time, accelerating despite the loss of key staff during the economic downturn and County wide budget cuts. Projects included; fiber infrastructure, two additional network operations rooms at 1111 San Felipe Rd (HSA), and 2301 Technology Parkway, physically secure and self-cooling racks, a storage area network (SAN), enterprise level backup implementation, wireless backbone linking the new facility with the county network, voice over IP Verizon phone solution, CENIC project and many others.

To capture the accomplishments of San Benito County IT in a page or two is difficult, and attempting to summarize it in a few words even more so, however as a piece of the modernization that the County as a whole has undergone, IT represents the commitment to create a stable, highly functional, and customer oriented government infrastructure to meet the needs of our staff and the people they serve.

## State of the County Infrastructure Today

The network infrastructure is in need of both an update (for security and stability reasons) and a redesign to allow for future proofing and simplicity. Our server hardware is largely reaching end of life and will no longer be supported leaving the county out of compliance from industry standards. Being out of compliance will result in our County becoming more exposed to cyber-attacks, spam exposure and systems crashes.

The software that manages our virtual infrastructure is two major versions behind and is unsupported. In the coming year a capital investment in two (six machine) virtual clusters is recommended to replace our existing machines, as well as ongoing funds in each subsequent year to address switches, storage, email (if not outsourced) and disaster recovery. Our current IT team is dedicated to find alternative functional solutions that protect, enable, and benefit our county employees; one of these solutions we are looking into today is the use of Office 365. This software can yield many benefits from accessibility, robust security and reliability, it is a software employees currently use and know how to operate and the software can continue to operate with current applications that may rely on its presence. This is just an example of solutions our current IT team is looking into to improve efficiency throughout our County.

Desktop refresh policy was a hopeful three year cycle when County IT started, a five year refresh rate would likely be more realistic given the life span of current technology, our budget and current needs - this would also need to be accounted for in the budget plans going forward.

On September 2015 the Board of Supervisors in an effort to enhance employee support, customer support and network security the board approved a \$150 thousand dollar Windows 7 upgrade for county computer systems. 140 computer systems throughout the county were identified to be 10 or more years old. All 140 systems were running Windows XP which is now at the end of support; these systems exposed our county to malicious attacks. With the purchase approval by the Board of Supervisors, IT has replaced all of these systems allowing the county to operate (from a local desktop perspective) at an industry standard, but end of life for Windows 7 is expected to be reached by 2020. Therefore it is imperative that we begin to explore for additional solutions and allocate resources.

## Staff

Current San Benito County IT staff consists of the following:

- 1 Information Systems Supervisor
- 1 Information Systems Database Administrator
- 1 Information Systems Technology Support Tech 2 (supports primarily HHSA – Staff of 200)
- 2 Information Systems Technology Support Tech 1 (1 of 2 supports primarily HHSA – Staff of 200)

The IT department has been resourceful in finding and using free software or using outdated software to assist in the deployment of systems, applications, security updates. Many of these free solutions typically result in added IT tech support time. In addition, IT staff has relied on online free training, training videos, and online forums to improve or bridge the technical gap that may prevent from resolving an issue.

At a glance the following IT Tech hours have been documented in the deployment of the most recent IT project, our Windows 7 Upgrade.

Time Frame: October 2015 – April 30, 2016 =>	About 120 work days
Time needed to configure, deliver and install computer system per Technician. =>	About 6hrs a day
Technicians focused on this project =>	2
Total time invested in windows 7 Upgrade =>	1,440hrs 5 month deployment span.

## Other County Staff Employee Count

The following figures are being included to simply demonstrate our County's need for additional full time employees in comparison to other similar size counties and neighboring county:

Monterey County:

Full time IT employees: 107

Support 100+ departments or between 4,000 full time county employees

(does not include P/T, temps/interns, contractors or external agency employees).

Calaveras County:

Full time IT employees: 9

Support 18 departments or between 480 full time county employees

(does not include P/T, temps/interns, contractors or external agency employees).

Tuolumne County:

Full time IT employees: 16

Support 45+ departments or between 632 full time county employees

(does not include P/T, temps/interns, contractors or external agency employees).

Tehama County:

Full time IT employees: 0, contracts out to APEX (no additional details were provided)

Support 26 departments or between 800-900 full time county employees

(does not include P/T, temps/interns, contractors or external agency employees).

Our findings support that additional dedicated, specialized staff is needed for our IT team to provide leadership, technical resources and expertise in developing and deploying modern information technologies to improve government efficiency, effectiveness, and promote innovation. Our IT team is in charge of managing systems, applications, communications, and the overall management and security of the county's information assets.

## Direction of the Industry

What a hybrid approach could offer us in terms of turning a harder to track series of capital investments into a contract limited operational model. The downside of relying on cloud base outsourced hardware during budget crunches is the ongoing cost need for services and support. The upside of this solution is the support and hardware maintenance that would be addressed by the cloud base hosted solution partner. Due to the nature of our environment and business there will be requirements that public safety's IT infrastructure remain onsite in case of an emergency.

On the other side from the cloud base approach is the full on premise systems and hardware support. This approach has proven to be difficult based on retention of technical staff to troubleshoot and maintain infrastructure. In the past this approach has placed the county in difficult situations where the county finds itself spending additional time and resources to address broken, outdated systems or hardware in a reactive fashion rather than in a proactive preventative fashion.

## Focus Areas for Enhancing the County's IT Infrastructure

### **Goal 1:** Improving the Capabilities of the Voice and Data Networks

- Improve our Data Storage
- Improve our Aging Virtual Servers
- Improve our Backup Infrastructure
- Improve our VPN access system
- Analyze the use of Office 365 solution
- Analyze the use of Voice over IP for the entire county and create a rollout plan.
- Improve our Internet connection from 20MB pipe to at least 100MB (to ensure functionality to current and potential future web-based hosted solutions).
- Analyze the use of an E-Discovery Solution

### **Goal 2:** Improve the Cost Effectiveness and Use of IT Resources and Services

- Review our current licensing to identify consolidation and cost savings opportunities.
- Continue to review and improve our ERP solution to optimize utilization of the resource.
- Improve/redesign our County website - identify consolidation and cost savings opportunities.
- Analyze the use of Wireless department solutions



## Productivity Benefits

The potent effect of decaying infrastructure on staff productivity – when applications are slow, or broken work just isn't getting done has taken a large impact on IT staff time. An example of this is our current Jail management system; Jcorr has encountered numerous issues around scanning documentation. IT and Jail staff has spent numerous amounts of hours trying to address the issues. The system application is outdated; the Windows 7 upgrade has assisted but not completely addressed the application issues. Currently the Jail has hundreds of hours backed up in documentation needed to be scanned.

Another example of an outdated system where IT and department staff continues to spend large amounts of time troubleshooting is the District Attorney department's DA Log. The DA Log is very slow when trying to access information, many times system freezes causing the user to at a minimum restart application but most time they need to restart the computer system. Updating these applications along with additional IT staff would greatly improve IT response time and department productivity.