

DEPARTMENT OF INFORMATION TECHNOLOGY

I. DEPARTMENT MISSION TO THE COUNTY

To provide leadership to County departments in the management and deployment of Information Technology (IT) and Telecommunications. Services include Administrative Support, Consulting, Analysis, Planning, Design, Project Management, Implementation Services, Maintenance, as well as, assessing, and monitoring the security risks in the application of technology and communications.

II. MAJOR BUSINESS UNIT FUNCTIONS

A. ADMINISTRATION/CUSTOMER CARE

The Administration Team provides management in accounting, budget, and administrative services with the goal of achieving efficiencies and transparency in daily operations. The primary function of this team is to oversee the purchasing and accounts payable process for all hardware, software, and professional services required to serve our customers.

Customer Care Center (Helpdesk): Our Customer Care Center is staffed 6:30 AM to 5:00 PM Monday through Friday. The Customer Care Center documents all reported problems and either solves the problem immediately or routes the problem to the appropriate business unit within DoIT for resolution.

BUDGET: \$3,789,967 (spread amongst all units in dept. 0147)

\$ 858,058 (cost transfer to dept. 0060/Telecommunications)

FTE: 12

B. OPERATIONS

The Operations Team manages the Data Center with two full shifts on site Monday through Friday from 6:30 AM to 11:00 PM. Using automation, Operations has been able to go to a "lights out" model on weekends. In addition, Operations utilizes a scheduling system to automate processes for our customers. We hope to expand this model over the next few years. The Operations team will also respond, work overtime, and weekends when required for unexpected events like a disaster or to support critical functions like payroll.

The Data center houses a variety of computer equipment, including but not limited to: IBM Z14 mainframe, AS/400s, RS/6000s, Sun and IBM UNIX servers, Window based servers, Virtual Tape System (VTS) that are connected and mirrored, high-speed laser and MICR printers. Operations is also responsible for the hardware and operating software on these systems and performs the Database Administration duties in support of Oracle, SQL, and IDMS data management systems.

Other duties of Operations include managing offsite storage and Disaster recovery processes: Off-site storage is utilized for customers' critical systems and information to support disaster and business recovery.

Regular testing of our UPS and Generator Power supply units ensures that all critical disaster recovery and power interruption backup equipment and procedures are available and operating for a smooth transition during an outage.

BUDGET: \$3,262,359

FTE: 8.23

C. SYSTEMS & PROGRAMMING

Systems and Programming (S&P) team is responsible for maintaining a wide variety of enterprise and departmental applications, in addition to providing business requirements, system analysis, custom development, integration, maintenance, and project management services for many departments.

Our Systems & Programming staff provide these services through Service Level Agreements (SLA's) and partnerships with several Departments. DoIT partners with customers annually to plan future projects and assist them with preparing the budget needed for their technology spend.

BUDGET: \$6,064,638
FTE: 23.63

D. NETWORK AND ENDPOINT SERVICES

The Network and Endpoint Services Team provides advanced network technologies to design, implement, and support the County's wide array of systems, applications, storage, and email services. This is delivered over leading-edge transport technology allowing the County to share data and collaborate, as well as host applications internal and external of the County. DoIT supports an environment with services located on premise and systems we have migrated to the private, government, and County supported Cloud service. This team provides our customers with business and technical consulting services, which includes project management, contract negotiation services, system integration services, enterprise-wide computing and file server availability, full back-up and storage services, and facility planning services.

For the most part this team provides these services through formalized Service Level Agreements (SLA), to help ensure a dedicated, guaranteed level of service.

BUDGET: \$2,544,439
FTE: 11

E. INFORMATION SECURITY

The Information Security Program exists to guide the coordinated design and implementation of processes to protect County digital assets from unauthorized access, use, misuse, disclosure, destruction, modification, or disruption. As the technology leader for Contra Costa County, DoIT is focused on development and oversight of the following service areas:

- Information Security Governance
- Information Security Risk Management
- Information Security Compliance Management
- Security Architecture
- Data Protection
- Vulnerability Management
- Identity and Access Management
- Threat Management
- Incident Management
- Culture and Change Management

BUDGET: \$767,043

FTE: 1

F. TELECOMMUNICATIONS/PUBLIC SAFETY SUPPORT

The Telecommunications team is responsible for County telephone and radio systems. The Telecommunications group provides services for daily add, moves and changes, as well as project planning and coordination with department facility moves. The Telecommunications Team partnered with Alameda County to support the East Bay Regional Communications (EBRCSA) public communications P25 System. This ensures installation, maintenance, and monitoring of the County's P25 radio systems for Contra Costa Sheriff, Fire, the incorporated cities police and fire, special districts, and medical facilities. As County department communications needs evolve both Telecommunications and Radio-Microwave groups evaluate the newest technologies and equipment providing a leading-edge solution to best serve County clients.

Other duties include:

- Responsible for the County's communications system:
 - Voice over IP and POTS voice communications
 - Smart Cellular Device communications
 - Data circuit communications
 - TV content broadcast and Broadband communications
 - County wide Microwave
- Provides support for the 5000 square foot data center, supporting County wide technology to implement and maintain Countywide applications, storage on premise, cloud, and security
- Supports technology needs for existing and new County facilities

BUDGET: \$13,440,000

FTE: 21

G. ENTERPRISE INFRASTRUCTURE

The Enterprise Infrastructure team ensures reliable, secure, and fast support and maintenance of the County's Wide-Area Network (WAN) infrastructure. The Enterprise Infrastructure team provides the connectivity between all County facilities for internet, voice over internet protocol (VOIP), County hosted applications, outside agencies including the Department of Justice, Emergency Services for the Sheriff, Police Departments and Contra Costa County Fire Protection District. The Enterprise Infrastructure staff designs, configures, deploys, maintains, and troubleshoots the county network, wireless, active directory, domain names system and email system. The Enterprise Infrastructure staff maintains the County's email, internet access, application system data transport, remote access with two factor authentication, wireless connection, virus detection, SPAM filtering, internet monitoring and security scan.

The Enterprise Infrastructure Team is funded entirely by customer fees for a monthly, per-unit, connection to the County's Wide Area Network (WAN) Infrastructure.

BUDGET: \$4,809,221

FTE: 6

H. GEOGRAPHIC INFORMATION SYSTEMS

The GIS Business Unit is responsible for coordinating GIS activities across all County departments. The primary responsibilities are to plan the overall GIS strategy for the County, act as a central resource for all departments, develop centralized applications and information sources, set policy related to GIS, and to ensure that GIS-related applications work together by developing standards and communicating with department representatives.

GIS is responsible for facilitating technical level coordination meetings within the County and between other agencies, as well as interfacing with other organizations on policy level discussions.

GIS is funded by contributions from each participating department, as well as by a portion from the general fund.

BUDGET: \$957,162

FTE: 5.14

III. DEPARTMENT DATA

BUDGET: \$32,702,920

FTE: 88

Filled: 73

Vacant: 15

| CLASS | ALLOCATED POSITIONS |
|--|----------------------------|
| Chief Information Officer (CIO) | 1 |
| Assistant Chief Information Officer (CIO) | 1 |
| Chief Information Security Officer (CISO) | 1 |
| Information Systems Division - Director(s) | 3 |
| Executive Secretary | 1 |
| Administrative Support / Customer Support | 2 |
| Accounting | 6 |
| Operations | 8 |
| Systems & Programming | 23 |
| Network and Endpoint Services | 11 |
| Enterprise Infrastructure | 6 |
| Telecommunications/Public Safety Support | 20 |
| Geographic Information Systems | 5 |

NOTE: (1) Budget Data as of 02/05/2021

IV. DEPARTMENT ACCOMPLISHMENTS

A. ADMINISTRATION SUPPORT/CUSTOMER SUPPORT CENTER SERVICES

The Administration Team provides support to all units of the Department of Information Technology. The Administrative Team's responsibilities include payroll, personnel actions, safety, training, building requirements, Small Business Enterprise (SBE)/Outreach programs, employee relations, the implementation of County and departmental policies and procedures, purchasing of all hardware and software, renewals, customer billing, purchase orders, accounts receivables, contracts, preparing and monitoring budgets. We also do accounts payable, financial reports, managing all telephone and voicemail accounts for the County, and communicating with all other County departments, special districts, and outside agencies.

The Accounting Unit processed:

- \$16.5 million in Accounts Payable
- \$15.5 million in Phone billing
- 114 Purchasing transactions totaling \$2.7 million
- COVID added \$1.4 million (197) transactions in additional purchasing, receiving, and invoicing of product from March – December 2020.

Customer Care (Helpdesk): Available from 6:30 AM until 5:00 PM, five days a week. Customer Care provides first level technical support and services to County departments by managing the Help Desk ticketing system, responding to customer calls and emails, and assisting with support to the County's main application systems such as employee self-service and payroll/benefit password resets.

This team administers the Board of Supervisors weekly meetings, online streaming, and archival system.

Customer Care continues to enhance the County's mainframe services for DoIT's Systems & Programming Division by resetting mainframe user accounts, troubleshooting mainframe printing, and updating program libraries.

The technicians have improved their skill sets with current Windows operating systems and core office applications. They administer our new cloud-based systems and several remote access solutions for end user support.

This team also monitors network traffic and activities for the County's internet, WAN, LAN, and Wireless networks using a Web-based monitoring system. This system has improved network availability through monitoring and within seconds of a network outage alerts the WAN group immediately. This facilitates trend analysis capabilities, which further advances the trouble shooting procedures.

B. SYSTEMS & PROGRAMMING

General Government

ERP – HCM/Payroll

PeopleSoft (HCM/Payroll – Countywide)

The purpose of the HCM upgrade was so the County can: (1) remain on a supported version of HCM; (2) reduce existing HCM customizations to the best extent possible; (3) reduce the number of existing reports and queries; (4) perform technical upgrades of remaining customizations; and (5) evaluate and implement new functionality.

Major milestones achieved:

- **Employee Self Service (ESS) - Tax Withholding W-4**

The office Auditor Controller and DoIT PeopleSoft team have implemented a self-service W-4 electronic form submission process within PeopleSoft ESS.

This feature removes paper and manual work associated county wide. This is a great addition to improve efficiencies on W-4 workflow within departments and employees.

- **Employee Self Service (ESS) - W-2**

The office Auditor Controller and DoIT PeopleSoft team have implemented a self-service W-2 electronic availability within PeopleSoft ESS. Employees can now opt for electronic online download of their W-2's. Prior to this year, all W-2's were mailed to employees.

This feature removes paper and manual work associated county wide. This is a great addition to improve efficiencies on W-2 reprints within departments and employees.

- **Automation**

DoIT PeopleSoft team has been working on automating processes within PeopleSoft and Kronos systems.

DOIT now utilizes Secure FTP methods to distribute reports to County departments, Unions, and third-party vendors.

The following reports in PeopleSoft run with no human intervention:

1. EHSD data feed automated with third party vendor.
2. ASD data feed automated with third party vendor.
3. NeoGov interface development and secure FTP transfer of data.

This is as ongoing effort to make additional manual processes move to automation.

- **ESS/MSS**

Employee Self Service (ESS) allows staff to view all paychecks and advices online and mobile platforms. Printing of advices have been eliminated, reducing usage of paper and distribution to each department at all County locations.

Manager Self Service (MSS) module is utilized by Managers to perform tasks/actions that have been streamlined online, via an approval workflow process.

- **Third party integrations**

Significant progress has been made in the County’s ability to integrate with Third Party systems. More and more vendors participate in this process every year. In addition to prior one’s below are added this year:

- Empower
- Kronos

- **Payroll**

Enhanced payroll processes. Added more automation and direct access for reporting. Eliminated paper reports by moving to electronic documents.

- **Departmental Support (Countywide)**

The DoIT PeopleSoft group receives requests from each department in the County to make data and reports available to feed into other systems or for audit purposes. Such requests are tracked and approved by HR/Auditors. Below is current status:

| Year | Change requests completed |
|------|---------------------------|
| 2015 | 97 |
| 2016 | 84 |
| 2017 | 78 |
| 2018 | 171 |
| 2019 | 283 |
| 2020 | 289 |

- **CCCERA (Retirement – Countywide)**

- Interfaces to CCCERA systems have been consolidated and retrofitted to work with the PS 9.2 system.
- CCCERA support continues both on current PS9.2 system. Modified I29/I30 programs to meet specifications from CCCERA.
- Phased out mainframe subledger.
- Validation of I29 by HR and I30 by AC completed.

- **NeoGov (Recruitment/Onboarding/Hiring - Countywide)**

DoIT Team has implemented the interface to NeoGov system that allows automated data flow into NeoGov system. Further work continues to better integrate PeopleSoft system with NeoGov.

- **Change Request System**

The PeopleSoft Change request application was further enhanced to meet the requirements for tracking requests including incidents. This application is used by DoIT, PeopleSoft staff, HR and Auditors.

- **Kronos (Time Entry – Countywide)**

The newly upgraded system has been stable with no critical issues reported.

- Few enhancements have been implemented in addition to support stabilization of new platform.

- Added new reports to system per department requests.

Employment & Human Services

Server upgrades/backup

FTP sites/services have been moved to Secure FTP(SFTP) sites. Work in progress on server backup strategies with latest upgrades in storage technology.

Mainframe

Translator index table updated with new aid codes and pin numbers. IPPD added to all mainframe procedures with print steps to extend retention period of reports in case it needs to be reprinted. Documentation created for around 19 daily, monthly, quarterly mainframe procedures.

CalWIN

DoIT is currently working with the customer on their data purification processes. This requires three rounds of processing with the vendor over the next year. More accurate data will result in less work for the caseworkers when CalWin gets into this County. If there are significant errors in the data, cases will not load into the CalWin system. If the case rejects, it is estimated it will take four to five hours to enter it as a new case into CalWin. Eliminating as many data errors as possible will significantly reduce conversion costs. A new Daily Procedure was created to upload the text messaging file from EHSD and send the file to CalWIN. Around 6 new programs and 4 new procedures were created to automate renaming of reports on the days we process more than one file. This process was simplified so new reports won't overwrite old reports created earlier on the same day.

File Transfers

We have converted several processes that created tapes that were mailed to outside agencies to FTP (electronic file transfer). The data coming back from those agencies have also been converted to FTP processes. This has saved time and money both in processing and mailing. We have also incorporated Secure FTP (SFTP) in some systems. One monthly state FTP process that retrieves monthly MEDS files was converted from regular ftp to SFTP.

Law & Justice Information Systems

Criminal

The Law and Justice team continues to receive many requests for enhancements for both the batch and online Criminal applications. The request can include state and local mandates, improvements to Criminal processing flow, and requests for additional recording mechanisms to assist with monthly statistics and calendaring. The team is also working with our partners to migrate the Criminal systems from our Mainframe system to Tyler Odyssey.

The S&P Law and Justice team continue to improve the process to edit the data before being added into the court's case management system. This includes process for automated data rejects and acceptance into District Attorney case management system. Contra Costa County Law and Justice integrated systems currently include the Courts

(Criminal & Traffic), Probation Adult & Juvenile, Public Defender, and the District Attorney Juvenile Application.

Criminal System Migration to Tyler Odyssey

Data Dictionary: County/Courts kicked off migration in December 2019. DoIT Systems analysts from scratch built a new Data Dictionary which was delivered to Court in September 2020. The Court has successfully planned and carried out data push into the new solution since October 2020. DoIT maintains this data dictionary and provides updates with ongoing research and development for the Court.

Full Data Export processing: DoIT recently revised and changed full data export processing for the Courts in place since 2016. In May 2020, we completed volume testing, provided statistical reconciliation information to ensure no criminal record is missed during export. DOIT partners with the Court IT to verify data and process bi-monthly. In January 2021, we finalized the last data push for easy load to the new Tyler Odyssey system. We renamed all destination files and conducted interface testing with Court IT to ensure data are still intact. The system continues to function well after the implementation of changes.

Reference Table Export: table export request has become very frequent, and the team implemented a regular process since February 2020. On a weekly basis, County sends the Courts all identified reference/lookup tables for the migration.

Traffic

The Law and Justice team of Systems and Programming continues to work closely with the Courts Traffic Fiscal Division. In 2018, the Courts started the migration of their Traffic Application (AMORS) from the mainframe environment to the Thomas Reuters Traffic System application (CTRACK). The cutover was completed in November 2019 with minimal impact on interfacing systems. DoIT continues to work with the Courts team on maintenance.

JAWS

We have partnered with CAO/LJIS and a vendor LexisNexis in converting JAWS to eWarrant. This system is set for go-live in March 2021. DoIT provides support to CAO/LJIS for connectivity to the appropriate testing platform and automated daily dumps of data for CAO. use in the analysis. This has reduced frequent requests and intervention from DoIT, saving time and reducing delay.

Land and Information Systems

LIS Committee (Assessor/Auditor/Tax Collector/DoIT)

- **Land Information Systems Annual Close of Assessment Roll:** The annual close of Roll is a yearly process that closes out the prior year's (2019/2020) assessment roll and creates a new fiscal year (2020/2021) tax roll. This year, due to COVID-19, the close of roll had a mandated extension by the State Board of Equalization. DoIT worked with

Contra Costa County departments (Assessor's Office, Auditor, and TTC) to postpone all job processing to accommodate the extension and extend scheduled roll jobs

As a result of this, jobs, procedures, and tax bill prints were successfully generated and sent to Contra Costa County taxpayer. Timely notifications were sent to District partners. DoIT produced over 362,000 timely and accurate prints of secured bills after Board of Supervisor approval of the tax rates in October. The 362,000 County parcel properties translate to over \$3 billion dollars tax revenue for County. The county is positioned to provide better service for the residents of Contra Costa County.

Contra Costa County Departments

- **Document Imaging at 651 Pine Street:** to reduce paper imprint, minimize physical storage footprint, make records searches easier and provide the ability for documents to be indexed and searched by topic. DoIT and Vendor partner Ray Morgan, digitized every document at 651 Pine Street, Martinez before they moved to the new Administration building.

County has over 3TB of data storage in the Enterprise Laserfiche Rio Cloud solution which was used across the enterprise. The county is on target to achieving a paperless office.

- Over 3.8 million images were scanned and migrated to Cloud storage. The usage is only at about 50%, with room for more images.
- County has provided departments an opportunity to establish a system of the record governance model. County departments can implement retention policies and schedules.
- Documents are readily accessed through roles and permissions security settings, making County data more Secured.
- DoIT can now provide good customer quality service through ongoing maintenance and support from the DoIT team and DoIT vendor partners.

Assessor Office

The Assessor's Office is constantly adding new features to their LIS, ASR (Supplemental), and Unsecured (BUD) applications through process improvement and automation. These improvements help increase productivity. We upgraded applications for the Assessor department to versions that could work on their remote platforms. Here are some major accomplishments:

- **Prop 58 .NET for Assessor:** Proposition 58 ordered by section 63.1 of the Revenue and Taxation Code for processing claims, is a constitutional amendment approved by the voters of California which exclude from reassessment transfers of real property between parents and children. We combined 8 existing Access systems into one application in .NET; reducing cost and time. Increased staff productivity; Streamlined Prop 58 processing and printing of P58 claims. There is a significant performance improvement over the prior platform.
- **Appeals COB.NET Appeals Application:** We provided the Clerk of the Board and Assessor, a new COB version for processing Appeals application between Contra Costa

County property owners and the Assessor Office. This brand-new application was re-designed and coded in a .NET application. Since implementation, there has been an increased movement in duties by the Assessor and COB. This has streamlined COB appeals processing, printing has improved, and have significant performance progress over the prior platform.

- **Assessor CCC Permits .NET:** This is a new .NET application for CCC Permits that replaces the Assessor's old Access building permits application.
 - The time to receive updated data from DCD is dramatically reduced. We have seen significant performance improvement over the old platform.
 - Permit Data flow from DCD to Assessor has improved significantly. Assessor now receives daily automated data refresh of permits.
- **Migration to .NET Application Deployment:** DoIT S&P has been migrating all ACCESS applications to a .NET. We provide support for all desktop and Web applications for the Assessor Office. We have been migrating Assessor Access Applications to SQL Server DB and .NET Front end. To date, we have successfully migrated 90% of their back-end databases to a SQL Server environment. We are now converting the front ends to a .NET to ensure enhanced data security.

Treasurer-Tax Collector (TTC) Office

The TTC department has many applications, process improvement and maintenance requests that DoIT supports. These improvements, with a blending of automation, have helped improve productivity, reduce downtime, and enhance operations. Below are some major accomplishments.

- **TTC Website/Databases:** The LIS Team provides maintenance, upgrades, backups of the TTCs Payment Website for all tax types. DoIT supports and maintains the backend reporting and database processing for these systems. In June, the TTCs website has been through many major modifications to enhance the taxpayer's ease of use experience for taxpayers. This has reduced foot traffic to the TTC's Office.

The TTCs website has been fully operational for the past fifteen years. Each year, the TTC's team and the LIS Team evaluate processes and methods to increase efficiency and ease of use for the taxpayers. We continue to add new features for taxpayers. Recently we integrated the Payment site with the Tax Collectors payment collection system (CUBs), where information regarding some partial payment delinquent taxes can be assessed and payments collected in real-time.

- **Tax Collector/Grant Street Partnership on Payment Vendor Provider:** The Treasurer-Tax Collector (TTC) switched payment vendors from Kubra to Grant Street Group. This was an enormous undertaking that took over a year of planning, development, and implementation. DoIT S&P partnered with Grant Street and TTC to develop and integrate a brand-new scheduled payments workflow. This improved Real-time access to tax information, secured daily file transfers, enhanced Tax Collector's tax lookup and payment

website, web services, and backend processes. Taxpayers now have the flexibility to schedule, select and pay different tax types online. The staff of TTC can now access a centralized transaction reporting. Search times for Property information and taxes owed have also reduced significantly.

- **Tax Collector's E-Billing Application:** This provides an electronic secured tax bill notification to taxpayers. DoIT rebuilt Tax online electronic billing application to reduce the number of application security vulnerabilities and provide a more modern look and feel to match the existing Tax Collector's tax lookup/payment website design. This has streamlined backend processes for effective support and maintenance.
- DoIT continues to provide and support various application systems for TTC. These include:
 - E-billing, Supplemental Estimator, Business License locator, Web services for Tax Information, data integration with third-party VBS (Virtual Billing System).
 - Electronic Deposit Permit application, sponsored by the TTC & Auditor-Controller. The EDP application fully automates the deposit permit process for all County departments and outside agencies that use the treasurer and their depositor. We are in the process of upgrading this system to automate the process of EDP line-item entry. This should let users import line items from a file. We expect this upgrade will tremendously reduce entry time by over 50%.
 - PTS/SPT/SAM systems: Back-office processes are in place to support the Tax payment website. We provide data extracts for the ORACLE database and regularly provide enhancements to this process as needed.
 - Tax Bills Printing: In 2020 approximately \$2.9 billion secured tax dollars in tax bills were printed. We continue to provide support for the redesign and printing of County tax bills for Secured, Supplemental, Redemption, and Unsecured properties with the Advanced Format Printing (AFP).
 - We maintained and provided access to tax bills online for Taxpayers who would prefer to view them online. There has been a significant rise in traffic to the website this past year. This has reduced misinterpretation of the tax information and manual work for TTC's staff.

Auditor-Controller Office

The Auditor-Control (AC) department has many application/process improvement/maintenance requests for many of the processes we support. These improvements/corrections help to improve productivity with the blending of automation. The AC has had limited resources and as a result, some of its projects have slowed down due to staff shortage. Nevertheless, below are the many projects which were completed by DoIT for the Auditor-Controller's office.

- **Web Service:** We build, maintain API services to enhance user experience for tax rate area lookup by property address on the AC website. This was achieved by adding web service API for Tax rates lookup by address for the Auditor's internet site through Civic plus.

- **Mainframe Systems:** LIS team provides support for refunds, unsecured and supplemental property. We continue to access, research, and provide analysis and program logic for AC programs and provide solutions for the various change requests from their department.

Special Projects

- We build and maintain web services, API, and other technology features to allow our partner vendors to consume County data from our legacy mainframe systems.
- We provide support for multiple applications and databases for County departments such as Public Defenders, Animal Services, DCSS.

D. NETWORK AND ENDPOINT SERVICES

The Network and Endpoint Services Team supported an ever-increased demand for IT innovations and cost-effective computing environment by County departments. Our team has consolidated and virtualized departmental enterprise servers, desktops, and network storages to achieve cost savings, improve performance, and mitigate risk. We applied new technologies that are consistent to industrial standards to maintain interoperability among departments' software, hardware, and applications.

Network and Endpoint Services provided network and desktop support to the County's Agriculture, Airport, Animal Services, Assessor, Auditor-Controller, CCTV, Clerk of the Board, County Administrator's Office, County Counsel, Human Resources, LAFCO, Public Works, Risk Management, and Veterans Services departments.

Network and Endpoint Services completed the following projects for County departments:

- Implemented a new virtual server infrastructure that utilized innovative hardware and ESRI solutions for the new County's Geographic Information System (GIS). Assisted County departments in accessing this new GIS portal.
- Worked with Public Works and vendors in upgrading hardware and application systems for the Countywide Fire Alarms, Secured Building Access, HVAC, Fleet and Fuel management, e-Procurement, and Mobile Citizen.
- Maintained the production of the PeopleSoft HR/Payroll virtualized server environment while it was being upgraded to a new and current version of PeopleSoft HR/Payroll system. Assisted DoIT and vendor staff with network access, desktop support, check printing and network resource allocations. Coordinated with internal DoIT staff during upgrade cut over to isolate data changes on the old production systems.
- Assisted with the new downtown Administration Building design and the Boardrooms IT requirements, datacenter needs, and logistics for the department's floor plans.
- Assisted departments in planning for network, server and desktop hardware, network printing management, wireless access, audio/video and conference equipment, and public visiting area layouts during department facility relocation or remodeling.
- Provided IT and multi-media needs for the Board of Supervisors offsite meetings.
- Completed migrating Clerk of the Board document management system to Laserfiche and implemented LaserFiche's Weblink for public access to board records.

- Completed migrating Maddybooks over to the Granicus Boards and Commissions.
- Upgraded IT equipment and renovated technology to streamline the training process for the Countywide new Budget system training with video recordings and webcasts.
- Took the lead on building the Counties Desktop Alert Server for the pilot program as well as working with the vendor and Risk Management with the implementation of the clients, IT access roles and policies for the application.
- Assisted the County Airport Operations to redesign field camera system based on Bay Area international airport implementations.
- Tested and assisted with implementation of large wireless extenders to provide long range Wi-Fi across airfield camera hubs.
- Installed and maintained multiple MS SQL Database Servers for department application systems. Assisted vendors in upgrade and migration of these application systems as needed.
- Provided remote application solution with Microsoft RDS for County staff to access the department applications while working with mobile devices and traveling outside of the County network.
- Continued the administration for the Countywide MS Active Directory. Recreated and redesigned County department's OU and GPOs up to current standards for Windows 10 and Server 2016.
- Deployed and maintained infrastructure for County departments' mobile devices.
- Continued hardware refresh and desktop computer migrations to current Microsoft Windows 10.
- Continued Windows server migration to virtual environment for better utilization of server resources on high-density servers and hyper-converge frameworks.
- Provided MS System Center administration for the Countywide SCCM 2012 supporting all DoIT SLA departments.

E. ENTERPRISE INFRASTRUCTURE

- Used alternate internet provider (Comcast) to increase the reliability between sites that have numerous users.
- In order to keep up with the growth of internet traffic, DoIT has upgraded our internet bandwidth to 1 Gig.
- Continue upgrading enterprise infrastructure equipment. This includes implementing a new higher capacity firewalls to support increased internet access and security requirements. Streamlining the use of enterprise infrastructure equipment, which leads to improved reliability and reduces costs. Implemented redundant servers to support core technology to eliminate downtime due to equipment failures.
- Implemented AT&T Frontline scan to alert County IT of potential problems before it becomes critical.
- Upgrading from AT&T Opetman to ASE to increase bandwidth from remote sites to core. This leads to higher bandwidth at reduced cost.
- Converging both voice and data into a higher capacity circuit which leads to substantial cost savings.
- Networked all major County phone locations to provide 24 by 7 remote access and monitoring. This allows DoIT telecom staff to make changes remotely and improves

service. Worked with Public Works to network most County facilities to support their security and environmental systems providing secure remote access.

- Re-designed and upgrade the ACCJIN network with an all-Fiber service transport to provide redundancy and reliability between the Sheriff, Warrant System, and police agencies.
- Implemented security changes to keep ACCJIN compliant with CLETS security requirements.
- Implemented monitoring of ACCJIN equipment and data circuits to notify the DoIT Customer Care and Enterprise Infrastructure staff when an outage occurs.
- Installed Wi-Fi access to several County locations. This is an ongoing effort to expand the internal and guest Wi-Fi network coverage within County Buildings.
- Implemented a new high speed and lower cost wireless Animal Services department enforcement vehicle system. This new system is a thin client iPad application access. It provides animal control officers a secure wireless network connection for their mobile data terminal needs. In addition, we completed the fiber optic service upgrade which greatly improved staff computer productivity.

F. INFORMATION SECURITY

Hired a Chief Information Security Officer to create a centrally focused Security Program in DoIT that spans County wide. This was in response to the recommendations made in the 2018 Grand Jury Report.

Implemented detailed logging system for our major computer systems and security appliances. The system has been implemented by integrating Splunk software and our enterprise firewalls and active directory servers.

Certain County departments have requested DoIT monitor their Internet activity. DoIT has provided as a service, detailed internet activity reports to these departments to review.

Completed a (3) Year County wide Information Security Plan.

G. TELECOMMUNICATIONS/PUBLIC SAFETY

The Telecommunications' telephone team during the past year has been moving forward with the networking of the County's telephone communications system. This project has an emphasis on disaster response, E911/A911 service and overall cost reduction.

Voice Conferencing service plus Web Collaboration is now provided via cloud service. This provides greater control to the conference host, web sharing, video interaction and participant polling.

The Telecommunications team is actively rolling out a new voicemail platform with enhanced features and functions. The new voicemail system allows end users the ability to integrate voicemail and email along with advanced iOS Smartphones.

Telecommunications is monitoring the infrastructure evolution that requires short- and long-term implementation of new network equipment and phones.

Future Endeavors

The telephone team will be preparing to implement E911/A911 service, which will transport address and room location of a call to the 911 emergency centers. This service will enable public safety to quickly respond to emergencies at specific identified County facilities.

Telecommunication is working closely with departments to provide remote phone access for those departments moving to home worker deployment.

Telecommunication now offers a record on demand feature for those departments requiring recorded validation and for training.

Telecommunications will continue to evaluate and implement Voice Over Internet Protocol (VoIP) technologies. Currently VoIP Technology installations have taken place at EHSD and HSD sites. Additional sites are being identified at this time for conversion. Telecommunications has implemented a hosted Call Center (IVR/ACD) service providing greater flexibility to deliver callers to the correct service, in-depth reports, easier script changes, and system redundancy.

The future of Telecommunications is changing every day. The transporting and routing of telephone calls is migrating from a hardware/copper environment to a software/Intranet environment. Radio systems are becoming integrated and support several technologies over the same radio platform. Telecommunications will continue to investigate newer technologies and introduce them as they become viable. Telecom will be incorporating more fiber optic transport to improve reliability and transport speed.

H. GEOGRAPHIC INFORMATION SYSTEMS

Powerful Analytical Tools

GIS has increased the importance and utility of the geographic component of information that governments routinely collect and maintain. GIS adds a powerful portfolio of tools to an organization's information technology capability due to its ability to integrate and analyze diverse types of information based on physical location or proximity of various features or characteristics. Many of the advantages of GIS are unique to specific applications. However, there are several general advantages that GIS offers public agencies and institutions.

Integration of Different Types of Data Based on Location and Time

GIS provides the capability to bring together different types of information based on their date and proximity and to explore their interaction. For example, GIS can take a civilian complaint about water quality and bring together data from all the different departments that monitor and permit water and ground use (Health Services, Environmental Health, Buildings and Planning). GIS then reveals the history of the water issue to staff by using the data gathered across all departments. This functionality allows staff from all involved departments to cross-reference all information about the issue and plan a solution together.

A Picture is Worth a Thousand Words

The ability of GIS to graphically display (map) data, provide reports (tables, charts, etc.) or create applications for different features or characteristics, relative to their location, is a

valuable tool in making an overall assessment of the implications of a specific set of information for public policy decisions or program planning.

Recording Changes and Keeping Maps and Records Current

The active link that GIS allows between databases and maps greatly facilitates the maintenance of mapped information on dynamic features such as property ownership, parcels, address points and streets. For example, using GIS, a County Assessor can, with relative ease, update a property parcel map with new information. That same update is then instantly shared with all staff that are using a web mapping application that contains the aforementioned parcel data.

Enhanced Analytical Capabilities

GIS provides a user with new enhanced analytical capabilities that would be difficult, if not impossible without this technology. For example, with the proper geographically referenced information, GIS can very quickly determine which emergency unit should respond to an E911 (Emergency 911) call from a specific telephone number and the fastest route to take during rush hour traffic. Then, after these incidents, GIS can then be used to create the quickest Emergency responder routes for different times of the day based on historic response times and routes.

Facilitates Sharing of Information among Multiple Users

GIS facilitates the sharing and integration of geographically referenced information among multiple agencies or users. There are many applications that require common types of data (address points, address locators, highways, streams, property parcels, etc.). The coordinated GIS approach we have taken has reduced costs associated with the duplication of data development and maintenance by having one entity responsible (DoIT) for the development of commonly used data*. The most important benefit has been the consolidation of the data to a single dissemination point. This has enabled the same information to be accessed and used by different public entities and agencies that make and implement public policy.

DoIT GIS Accomplishments for 2020:

During 2020 DoIT GIS provided GIS solutions to several departments in their response to the COVID-19 pandemic. For Sheriff OES/EOC we created and maintained a daily count of COVID cases and deaths not only for Contra Costa County, but for all counties in California. This project has seen us collaborate with several counties in data sharing and the dashboard we created has been used as a template for other counties to use.

We were centrally involved in HSD's 2020 homelessness survey, providing mobile apps for data collection, and setting up a command post to monitor activities during the survey. We continue to support their field work teams by streamlining their workflow on daily activities and providing their dispatch team with the ability to monitor field activities and assign work orders.

Assumed responsibility for the critical P6 Tax assessment project for the Sheriff's office from DCD and developed a new solution for them that will add the power of GIS to their analysis. The solutions created for these projects have proved critical to improving our transforming the existing business workflow. For the Sheriff / EOC, GIS was used to modernize the way data, maps and apps were used by decision makers during critical times (Fire, PG&E PSPS, etc.). For HSD it meant increasing production by: limiting pencil and paper, vastly reducing and or eliminating the time it takes to enter data into their

systems, enforcing data standards and increasing staff safety. Through these projects, DoIT GIS continues to lead Contra Costa County and California in GIS / IT by meeting business need with cutting edge GIS / IT solutions.

GIS Departmental Projects:

Animal Services

- Creation of a live linked dashboard that allows the Animal Services Director to see:
 - Kennel Capacity data for all animals.
 - Animal Outcomes (in as stray out as adoption)
 - Length of Stay
 - Dispatch Cases
 - Treatments
 - Bites

Assessor

- Parcel updates made available for public download.

ConFire

- Integrating GIS with their *Permitting* & Compliance AMANDA system
- Digitizing and customized labelling for their station wall map projects

DCD

- DCD could no longer support the Sheriff P-6 Assessment and gave the task to DoIT GIS

EHSD

- Created extensive web mapping and analytics
- Created in depth Board of Supervisor based reporting dashboard for all EHSD projects
- Quarterly reports of all welfare programs in the county, providing mapping and tabular reports.

HSD

- Completed, deployed, and continue to support a total dispatch, survey and tracking solution for the 2020 Point in Time homeless survey.
- Providing food distribution apps for CCHHealth
- Created reports and analysis products for HSD from envision HIMS data.
- Developed maps for CCHHealth Pest Management

Public Works

- We completed all high priority flood and right-of-way PW projects
- Working to bring PW GIS enterprise up to latest levels in alignment with DOIT GIS.

Sheriff

- P6 Tax assessment solution.
- Continuing to coordinate address and street updates for Sheriff Dispatch

Other

- **CCMap** and **EmployeeGIS** app providing a wide range of authoritative county GIS data for county staff and the general-public.
- Ongoing maintenance of the county's address point layer and providing up to date geocoding services.
- Servicing data requests from our city partners in the county. Providing rest endpoints for data sharing.
- Responding to GIS data requested throughout public facing download site and email system.
- Continuing to grow our online presence in ArcGIS online and Portal, increasing the number of county staff users, providing solutions for departments to utilize their data and use GIS to streamline workflows.

Regional / State-wide projects:

East Bay Emergency GIS Group

- Created one GIS Group that shares all authoritative data within the East Bay.
 - This solution allows all Emergency Operations Centers, Departments, Cities and Utilities to have one common operating picture during emergencies.

I. LIBRARY SUPPORT SERVICES

Effective October 2020, The Department of Information Technology assumed responsibility for the technology support of the Library Staff network. This support is limited to Administrative systems only. The County Library maintains technical support for the external public access systems. Two library positions were transferred to DoIT to support the library's network, servers, databases, and enterprise systems. This work will include upgrading the network infrastructure, moving servers to hosted solutions, as well as upgrading and implementing security tools.

V. DEPARTMENT WIDE

Internal to DoIT: DoIT has continued to compress the total cost of ownership (TCO). We continue to move as many employees as possible to tablet and other mobile technologies, allowing them to work "unconnected" in the field. Wireless use has taken a big jump internally in the past year, as we continue to test the potential of this new technology inside the department before rolling more Countywide applications out. The department continues to implement and strengthen WIFI services in major County offices. We continue to invest in the most current technologies in the area of email "SPAM" and computer virus fighting and the growing "Ransomware".

Understanding budgetary limitations are an on-going issue, we have been focusing on upgrading and replenishing our oldest technologies as funding allows, while at the same time working out ways to extend the life of the technology we will be unable to upgrade until a future date.

Internal to County Operation: Continue to maintain and enhance the East Bay Regional Communications System (EBRCS) Project 25 (P25) public safety radio system. This has been a two County Radio system project that went live in West Contra Costa County in the last quarter of 2012. The Central and East Contra Costa County went live at the end of 2013. The system is a regional radio system and

provides interoperable communications between all agencies within Alameda and Contra Costa County. It also provides a significant coverage footprint for all agencies. Local law enforcement will now be able to use their radios miles beyond their city limits.

VI. DEPARTMENT CHALLENGES

INTERNAL TO DEPARTMENT AND COUNTY OPERATION

This section has been combined for this year's report, because the same issues will impact both the internal department and the County in the same fashion, resources, and actions outside of our own control.

Because of the nature of the industry DoIT supports (Information Technology), we will always be in some sort of transition. Currently, we have a collection of eclectic County systems we support for our customers, from legacy to cutting edge technology. DoIT will not be able to continue to recruit and train new County IT staff for legacy applications. The process of migrating legacy applications to current state of the art IT systems has moved slowly. For Contra Costa County to begin to move forward with IT legacy migration initiatives, there will need to be an investment made in Central IT at DoIT.

The recruitment and retention of qualified information technology staff is an ongoing challenge. DoIT has an excellent working relationship with the County Human Resources department, who work with us to enhance our job specifications and research multiple recruitment avenues. In every IT recruitment, there are issues of compensation (below average Bay Area IT wages) Contra Costa County offers to their possible candidates. As a result, DoIT continues to find creative ways to fill our vacancies, like investing in student interns who apply to be career employees. At the same time, we are unable to hire the highly skilled staff needed because we are not competitive. DoIT salaries are also below the salary level for County HSD IT.

There is always the internal opportunity of saving department program dollars versus department operational support dollars. The County must continue to provide necessary services outlined by the CAO Board of Supervisors. However, almost every County department relies heavily on its application of technology. When DoIT is forced to make staff reductions because of budget cuts dictated by departments, it impacts our ability to deliver services. We lose new staff that may be learning a County-specific set of tasks or those who have been critical to supporting County services.

VII. PERFORMANCE INDICATORS

| DoIT | FY 16/17 | FY 17/18 | FY 18/19 | FY 19/20 |
|--|-----------------|-----------------|-----------------|-----------------|
| Performance Measures | Actual | Actual | Actual | Actual |
| Workload Indictors | | | | |
| Enterprise Server Transactions Monthly | 1,550,160 | 1,506,866 | 1,501,857 | 1,495,330 |
| Viruses Blocked | 25,300 | 49,600 | 24,815 | 12,276* |
| Spam Emails Stopped | 6,100,000 | 3,300,000 | 5,680,000 | 862,020* |
| Outcome Indicators | | | | |
| WAN Availability | 99% | 99% | 99% | 99% |
| Mainframe Enterprise Server Availability | 99% | 99% | 99% | 99% |

*Spam: Due to changes in architecture and tooling, DoIT does not have a complete accounting of this number. However, based on estimates, DoIT believes the number is more than 1,000,000. DoIT is evaluating revised reporting methodologies to be in line with best practices.

*Viruses blocked: Due to changes in architecture and tooling, DoIT doesn't have a complete accounting of this number. DoIT is evaluating revised reporting methodologies to be in line with best practices.