

# California Information Technology **ANNUAL REPORT 2020** Leadership in a time of crisis



Gavin Newsom, Governor

Yolanda Richardson, Secretary  
California Government Operations Agency

Amy Tong, State of California Chief Information Officer,  
Director, California Department of Technology



## LETTER FROM THE STATE CIO AND DEPUTY STATE CIO



**Amy Tong**  
State of California  
Chief Information Officer  
Director, California Department  
of Technology



**Richard Rogers**  
Deputy State of California  
Chief Information Officer,  
Chief Deputy Director, California  
Department of Technology

Looking back over the past year, 2020 looms as a reminder of how our everyday world can turn upside down – seemingly in a heartbeat.

During the year, California experienced a whirlwind of emergencies. The COVID-19 wreaked havoc on residents' health, as well as the state's economy. Wildfires ripped through more than 4 million acres. During high winds, hundreds of thousands of residents experienced electric utility Public Safety Power Shutoffs. This unprecedented time called for unprecedented government leadership and technological innovation. In response, technology leaders were called upon to develop solutions quickly and effectively.

State and local governments collaborated around-the-clock with education, private industry and volunteers to innovate new approaches. The new normal required a massive transition to remote work and highlighted the need for statewide, high-speed broadband. We automated where we could, using analytics and piloting artificial intelligence applications. Our procurement process shifted into high gear, cutting procurement duration from months to just weeks—and even less in some cases.

While 2020 may be in our rear view mirror, we will grapple with its impact for years to come.

The emergencies have accelerated the hard work of transforming government. This transformation needs more than technology alone can offer. We must put people first. We must drive continuous, timely improvement. And, we must also work together across the state to make government work better for all Californians. How we'll succeed has been laid out in the state's new, 3-year technology strategic plan—Vision 2023.

We look forward to working with you on what's next.



# TABLE OF CONTENTS

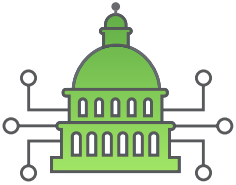


California Strategic Plan - Vision 2020	<b>4</b>
Introduction	<b>5</b>
Improving Public Safety and the Security of Sensitive Information Assets	<b>6</b>
Performance Metrics	<b>12</b>
Enabling Successful Project Establishment and Delivery	<b>18</b>
Fostering a Dynamic and Unified Technology Workforce	<b>22</b>
Providing Efficient and Effective Government Services Through Innovation	<b>26</b>
Thank You Volunteers!	<b>32</b>
Acknowledgments	<b>36</b>
Abbreviations and Acronyms	<b>37</b>

# CALIFORNIA TECHNOLOGY STRATEGIC PLAN

## VISION 2020 GOALS

### Create One Digital Government

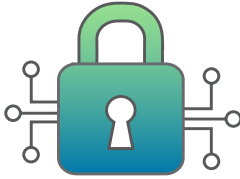


Increase customer satisfaction through improved responsiveness, efficiency, and effectiveness of government services.

#### PRIORITIES

1. Increase operational agility and performance in the delivery of technology services.
2. Improve the design and delivery of digital services.
3. Foster collaboration and boundaryless behavior.
4. Transform and simplify the way government does business through innovation.
5. Accelerate the adoption of common technology platforms and shared services.

### Ensure Secure Delivery



Advance the maturity of information security across California government.

#### PRIORITIES

1. Protect California's information assets and maximize data access.
2. Develop a robust and collaborative security risk reduction strategy.
3. Develop an enterprise approach to security leadership and governance.
4. Improve and invest in security capabilities to protect mission-critical systems and data.
5. Foster a security-minded culture throughout California's workforce.

### Build a Dynamic Workforce



Build a dynamic technology workforce that takes pride in delivering quality services and innovative solutions to their customers.

#### PRIORITIES

1. Create a culture of innovation and collaboration.
2. Develop the capabilities of both technology leaders and functional experts.
3. Improve employee engagement and increase retention of quality employees.
4. Expand our pool of skilled and experienced technology professionals.
5. Foster a diverse and unified technology community.

# INTRODUCTION

## WHY DOES THE CALIFORNIA DEPARTMENT OF TECHNOLOGY PRODUCE AN ANNUAL REPORT?

The California Department of Technology (CDT) produces an annual report for several reasons.

First, California State Government code requires that CDT produce a report that measures the performance of the State's IT community over the past calendar year. The report is an important mechanism for accountability and transparency, as well as for communicating government technology performance to stakeholders and the public based on shared a mission, vision and guiding principles established in the California's Statewide Technology Strategic Plan Vision 2020.

The report categorizes these metrics in four themes:

- 1 Improving Public Safety and the Security of Sensitive Information Assets
- 2 Enabling Successful Project Establishment and Delivery
- 3 Fostering a Dynamic and Unified Technology Workforce
- 4 Providing Efficient and Effective Government Services through Innovation

Second, the annual report highlights the culmination of collaboration between the Department of Technology and reporting IT organizations within state government. Innovative projects and initiatives showcased here were launched during the year and demonstrate how the guidance and focus of the state's IT community helped the state achieve its goals.

Finally, because this year in particular has placed many demands on technology to respond to the profound challenges presented by the pandemic and wildfires, the 2020 annual report offers an opportunity to recognize those volunteers who put the health and well-being of residents first.



## IMPROVING PUBLIC SAFETY AND THE SECURITY OF SENSITIVE INFORMATION ASSETS

### GREAT PLATES DELIVERED

In response to the COVID-19 pandemic, the California Department of Aging and the Governor's Office of Emergency Services collaborated to pioneer the first-in-the-nation launch of the "Great Plates Delivered" program, a meal delivery service for California's older adults.

With the program, local administrators collaborated with local restaurants and food providers to deliver three nutritious meals per day to eligible seniors, free of charge. Local administrators determine how meals are selected and delivered, and food delivery people are subject to background checks. By the end of December 2020, the Great Plates program had contracted with approximately 700 food providers who delivered more than 22 million meals to almost 42,000 individuals.

Great Plates Delivered serves two purposes:

1. Help seniors and other adults at high risk from COVID-19 to stay home and stay healthy by delivering three nutritious meals a day, and
2. Provide essential economic stimulus to local businesses struggling to stay afloat during the COVID-19 crisis.

The program is an innovative approach to providing vulnerable seniors with meals while supporting local businesses struggling economically during COVID-related shutdowns. The program is funded by county and city governments and may be eligible for reimbursement by FEMA Public Assistance or California Disaster Assistance funds.

## NATURAL RESOURCE AGENCY RAISES ITS SECURITY POSTURE

The rapid growth of sophisticated cyberattacks demands that the state continue to develop and deploy well thought out countermeasures to protect sensitive data.

That is why the California Natural Resources Agency (CNRA), working in conjunction with the California Department of Technology's State Information Security Office, designed and implemented a CNRA-wide Security Operations Center (SOC). The CNRA SOC provides critical cyber and information security controls, security monitoring, proactive vulnerability management, security analysis, threat intelligence, attack prevention, and incident response.

The SOC offers an improved security ecosystem for protection, prevention and rapid response to events throughout the agency enterprise. It ensures secure systems and data integrity for critical infrastructure, public safety, and health of CNRA organizations' critical information and data systems. This includes numerous specialized technology solutions related to areas such as water management and delivery, energy management, conservation, oil and gas, land management, recreation management, engineering, and environmental science.

## CALFIRE FIGHTS BACK WITH WILDFIRE PREDICTION SOLUTION

In 2020, over 9,000 wildfires scorched more than 4 million acres of California, taking with them structures and lives. In response, CalFire embarked on finding innovative solutions to address the state's worsening wildfire challenges.

CalFire was determined to find a way to accurately predict the spread of fire – and it did. The Department implemented a technology solution that provides the ability to perform wildfire risk forecasts and real-time, on-demand wildfire spread prediction models throughout the state. The new capabilities allow staff to analyze fire behavior and predict spread within minutes, providing immediate information to support response and suppression decision making. The system is integrated with

the CalFire Computer Aided Design environment to provide spread predictions automatically for each reported fire incident. The prediction tool pulls together different data sources in real time that fire managers use to make on-the-ground decisions. This powerful solution can be accessed from a desktop computer, a laptop in the field or from fire commanders' smartphones.

The solution leverages the advanced spread modeling by integrating commercial weather forecasting to run hundreds of millions of predictions to derive a daily risk forecast across the state.



## IMPROVING PUBLIC SAFETY AND THE SECURITY OF SENSITIVE INFORMATION ASSETS



### MYCHILDCARE OFFERS PARENTS OPTIONS

Children's well-being is the greatest concern in parents' lives. Millions of Californians rely on safe, licensed daycare options so their children are safe while the parents work. During the COVID-19 response, many schools and childcare facilities closed, requiring working parents to quickly find safe and reliable childcare options.

The California Department of Social Services (CDSS) and California Health and Human Services Agency (CHHSA) responded to the childcare need by building the MyChildCare.ca.gov application in 10 days. CHHSA and CDSS worked with the University of Southern California's Children's Data Network, the Governor's Office, local resources and referral agencies, and statewide childcare providers to build a searchable, web-based interface. The application provides an interactive map of qualified, licensed childcare providers in English and Spanish.

This online tool connected essential workers to childcare providers when most daycare centers were temporarily closed.

For the first time, Californians can visualize the availability of childcare slots across the state. CHHSA data investments in integrated data systems make MyChildCare possible and allow the state to answer questions that will keep Californians safe during future events such as public safety power shutoffs and wildfires evacuations.

### TRACKING THE NUTRIA TO PROTECT THE DELTA

The California Department of Fish and Wildlife (CDFW) is employing technology to negate the damage done by nutria, an invasive rodent species that is chewing its way through California.

The nutria is an omnivore that lives up to 10 years in the wild, weighs between 15-20 pounds, and has the ability to produce up to 200 offspring a year.

The nutria pose a threat to the Delta's flood control and water distribution networks, especially levees and other infrastructure and must be eradicated before the species destroys the critical California Delta ecosystem.

The department's innovative solutions combined artificial intelligence (AI), GIS, broadband, cameras and sensors that divide the state into 40-acre grid sections. The grid pattern allows the department to confirm the presence of nutria and their travel patterns, then deploys resources to trap them, allowing it to focus on where action is needed.



### eWIC DELIVERS FOR CALIFORNIA FAMILIES

For years, the California Department of Public Health (CDPH) relied on its Electronic Benefit Transfer (EBT) card to enhance its special supplemental nutrition program for Women, Infants and Children (WIC). This year, the department introduced a new, multi-phased Management Information System project to link to the EBT system, eWIC, making it easier to access benefits and more efficient all the way down the line of distribution. Ultimately, eWIC will include 83 local agencies and 500 clinic sites throughout California.

Currently, more than 1.3 million California mothers and young children at nutritional risk use the WIC program to supplement their diets with healthy food. The federal Healthy, Hunger-Free Kids Act of 2010 required all states to migrate from antiquated information systems and paper vouchers to an electronic benefit delivery system by October 1, 2020.

The California Department of Public Health and the Office of Systems Integration collaborated to roll out a new system that integrates electronic benefits and mobile connectivity. When COVID-19 struck, the project had deployed to nine of the 10 waves using an on-site training and support model. After the ninth wave, stay-at-home orders required staff to quickly reformat all in-person training to remote sessions and to remotely deploy and support statewide WIC clinics, all while meeting its April 2020 deadline.

With the new system in place, participants receive food benefits electronically on their WIC cards and can purchase food at any point-of-sale terminal. Participants also can use the new mobile application for phone and video appointments, as well as to check their benefits, or locate WIC offices, farmers markets, and WIC grocers. As of April 28, 2020, participants completed more than 4.5 million WIC Card transactions. Other benefits associated with the project include streamlined checkout and expedited vendor settlement. Local agencies will have the ability to track benefit use in real time, giving CDPH on-demand information on food redemption, improved data and reporting, and the ability to serve California residents and vendors better.

“When COVID-19 struck, the project had deployed to nine of the 10 waves using an on-site training and support model.”





## IMPROVING PUBLIC SAFETY AND THE SECURITY OF SENSITIVE INFORMATION ASSETS

### CA NOTIFY: A SMART COVID-19 IDEA FOR SMART PHONES

Finding new ways to slow and stop the spread of COVID-19 throughout California has occupied public, academic and private sectors from the start. While being aware of one's surroundings remains the best way to avoid contact with someone infected with the virus, the State has introduced a new tool into its COVID-battling arsenal: CA Notify.

Briefly, CA Notify users receive automated notifications informing them if they were exposed to someone who tested positive for the virus. This enables them to take immediate action around quarantine and testing. When individuals voluntarily activate CA Notify, the software uses Bluetooth technology to exchange randomly generated codes between phones without revealing the user's identity or location. The app does not collect the location of a phone or individual to detect COVID-19 exposure and it does not share a user's identity. Californians opt in to use the tool and may opt out at any time.

"Throughout the process of developing, testing and launching the exposure notification technology, privacy has always been our foremost concern," said California Department of Technology's (CDT) Acting Chief Legal Counsel Sahana Ayer. "We have tested and validated the privacy-centric design of the technology. CA Notify does not collect, store or distribute personal information at any point in the process. Our privacy policy describes how we protect users' privacy."

Making CA Notify available to all Californians was a immense collaborative undertaking by a team that included Apple and Google, the California Department of Public Health (CDPH), CDT, and UC San Diego Health. Members of CDT's tech team completed automation in a two-week, breakneck sprint.

"The University of California San Diego team has been a tremendous partner in helping to launch the CA Notify pilot, expanding it to other UCs, and now supporting the statewide CA Notify rollout," said Carolyn Nordstrom, deputy director, California State Project Management Office.

"Significant automation through data pipelines enabled rapid communication to alert users who may have been exposed to COVID-positive patients," said Acting State Chief Technology Innovation Officer Manveer Bola. The faster people are notified of possible exposure the faster they can take precautions to stop the spread."

Prior to releasing the app statewide, the CA Notify team conducted an initial, month-long pilot on the campuses of UC San Francisco and UC San Diego where approximately 50 percent of on campus students activated the app. Following that pilot, CA Notify was extended to pilot in five more UC campuses in order to reach a larger and more diverse pool of users and to further evaluate the app's potential to help California slow the spread of COVID-19.

With pilot data in hand, CDPH and CDT launched CA Notify statewide on December 10, 2020.

In California, more people activated CA Notify on its first day of release than in any other state. Currently more than 8 million, or 25 percent of adults in California, have CA Notify activated on their smart phones.

California automated the delivery of CA Notify test verification codes, allowing participants to activate exposure alerts very soon after they learn of their COVID-positive test result. CDT is sharing its automated code distribution software with other states through its open source portal, [code.ca.gov](http://code.ca.gov), to help them improve their own notification speeds.

### PUBLIC HEALTH ORDERING SYSTEM (PHOS) / MEDICAL RESOURCE REQUEST TRIAGE AND ADJUDICATION SYSTEM

At the beginning of the COVID-19 response, medical resource requests were submitted using a system of emails, PDF forms, and phone calls. This process lacked transparency and did not allow the state to prioritize and report on requests effectively. The California Department of Public Health (CDPH) and the California Governor's Office of Emergency Services realized this system would not scale to meet the moment.

The Public Health Ordering System (PHOS) is an application that helps the state leverage a data-driven process to deliver urgently needed public health resources to everyone from hospitals to alternate care facilities across the state.

Deployment of this app has drastically improved customer service and collaboration

across county Medical Health Operational Area Coordinators, Regional Disaster Medical Health Specialists, the Medical and Health Coordination Center, run by CDPH, county emergency managers and state agencies.

PHOS has allowed for improved reporting and dashboard capabilities, a reduction in manual data entry and associated errors, and increased visibility into the overall supply and demand for vital medical resources throughout the State.

PHOS has also been connected with United Parcel Service to automate the remaining steps of the order fulfillment process. This includes order receipt and shipping/tracking emails directly to customers for improved visibility into the supply chain.



### MyShake APP

The California Governor's Office of Emergency Services (Cal OES) received direction to create and publish a new website for the promotion and socialization of California's Earthquake Early Warning System and for the MyShake App for iPhone and Android users.

Designed by UC Berkeley, the MyShake App pairs with Cal OES' Earthquake Early Warning System to alert users of nearby earthquakes. It is similar to Amber Alerts and flood alerts, but it utilizes modern cell phone accelerometers to detect ground shake

and feed earthquake data back to the Early Warning System.

Launched on the 30th anniversary of the Loma Prieta earthquake, Earthquake.CA.Gov serves as the state's primary resource for information about earthquake preparedness, alert and warning technology.

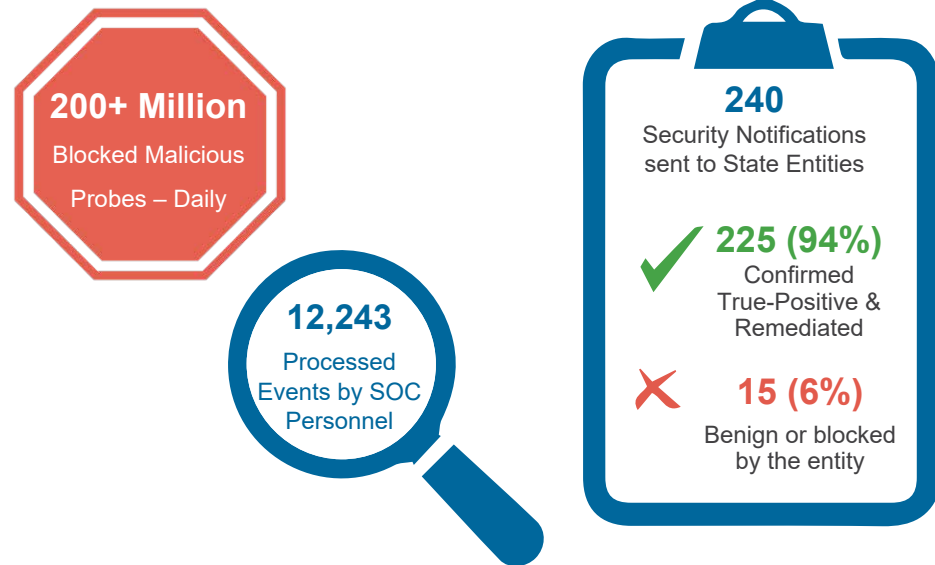


# Performance Metrics

The following metrics are part of CDT's performance management framework. Performance targets were initially identified in the 2016 Annual Report. Subsequent reports show the annual measurements of progress in improving and enhancing the state's information technology program.

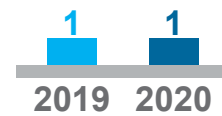
## SECURITY

### Malicious Activity Detected by the Security Operations Center



The number of malicious activities detected in 2020 by CDT's Security Operations Center (SOC) targeting the California Government Enterprise Network (CGEN) and other IT systems owned and/or managed by the State Data Center.

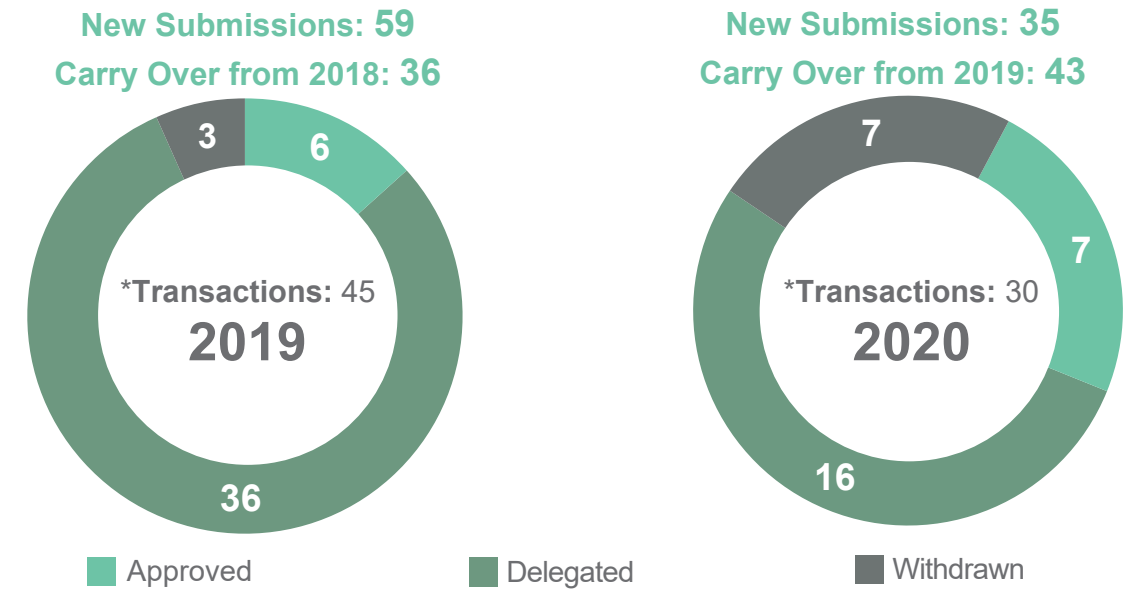
### Number of Electronic Incidents Resulting in the Unauthorized Disclosure of Personal Information



The number of breaches during the calendar year that involved Personally Identifiable Information (PII) contained in lost or stolen unencrypted electronic devices and storage media. This number does not include paper and verbal releases of information.

## PROJECT DELIVERY

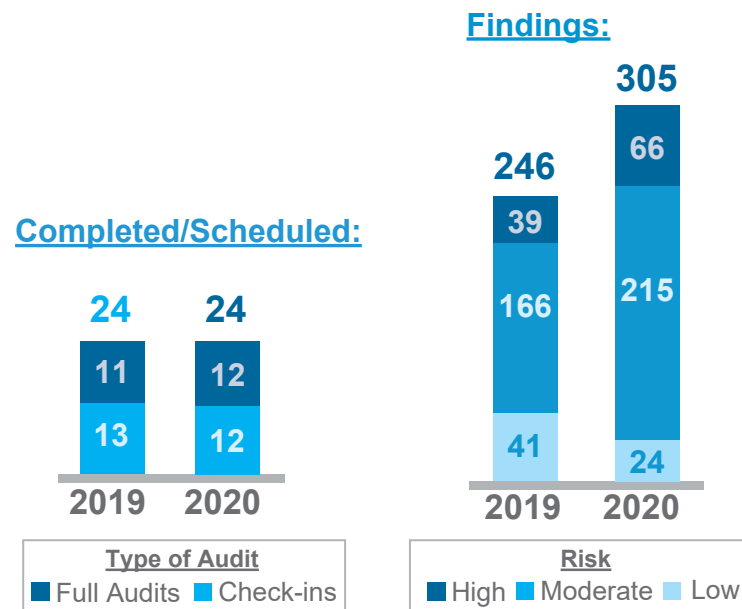
### Number of Technology Initiatives in Project Approval Lifecycle



The annual workload results for CDT review and approval through the state's Project Approval Lifecycle (PAL). PAL is a multi-stage project planning and approval process that helps state entities develop a strong business case, clear business objectives, appropriate solutions, and more accurate costs and schedules. PAL provides flexibility to help expedite approvals for low-risk projects and build additional support for more complex, high-risk projects.

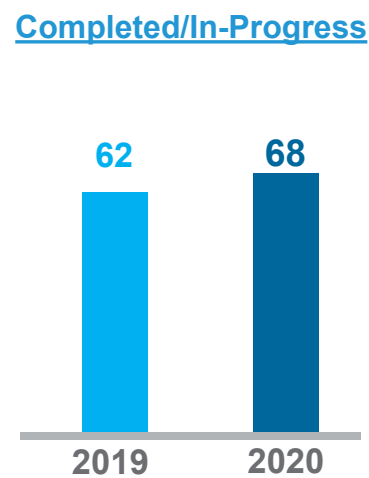
\*Transactions: Number of projects "approved", "delegated", or "withdrawn".

### Information Security Audits (Policy Focused)



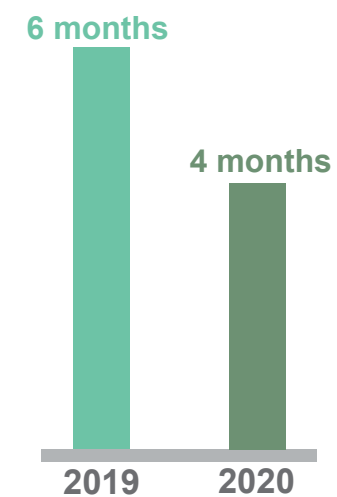
The number of Information Security Audits conducted by CDT and their corresponding findings. Each audit includes a comprehensive evaluation of the state entity's infrastructure and security practices to ensure compliance with state policy and federal standards.

### Independent Security Assessments (Technical Focused)



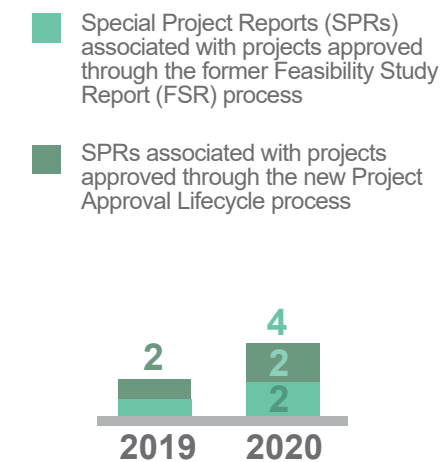
The number of Independent Security Assessments conducted by the California Military Department, or an approved third party, and a summary of their findings. Some focus areas include: asset management, continuous user training against Phishing attacks, and consistent patching for vulnerabilities.

### Median Duration of Project Procurements



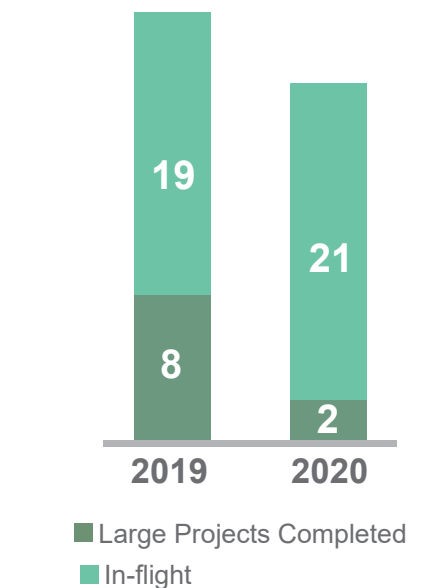
The median duration of project procurements is 4 months, but emergency procurements were completed in a median duration of 11 days.

### Number of Projects with Major Variances



The number of Special Project Reports (SPRs) submitted for non-delegated projects. SPRs are required for project schedule, cost, or scope variances in excess of 10%.

### Large Projects Completed Within Schedule and Budget



The number of complex technology projects completed timely and within budget compared to latest approved schedule and budget (no more than 10% variance).



# Performance Metrics

## PROJECT DELIVERY

### COVID-19 RELATED INITIATIVES

Business Value Delivered Rapidly through Pandemic Response Initiatives

- Criteria:**
- Pandemic response related (Urgent need)
  - Rapid Delivery (within 90 days)
  - CDT facilitated



**75 EMERGENCY PROCUREMENTS** completed by CDT to support statewide pandemic response efforts



**18 WEBSITES**

**21 DASHBOARDS**



#### 1 CDPH

- CA Notify
- CalCONNECT
- CCRS
- CalVax (three tracks)

#### 2 EDD

- UI System Monitoring
- EDD UI Sustainability
- UI Surge and Expedite Process
- FED Care Package Funding System and Pandemic Insurance Program
- EDD Call Center to Support UI Surge
- Work-Share
- Job matching platform with LinkedIn, Go-Biz and LWDA

#### 3 CalOES

- Donations and Supply Intake Portal
- Procurement Management: Applications
- Procurement Management: Public Health and Medical Resources

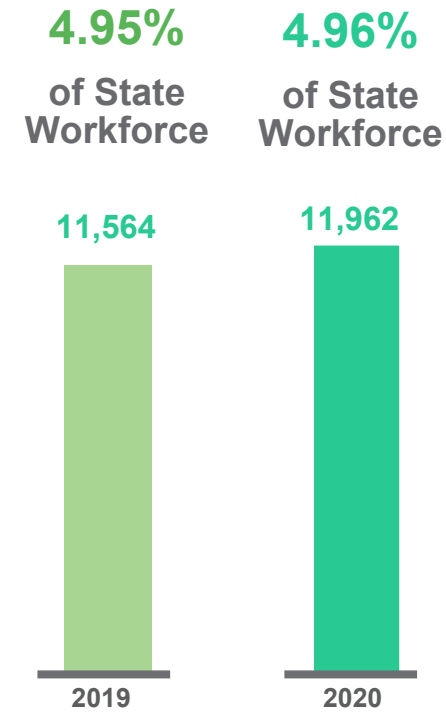
#### 4 Other

- Relief Fund Reporting (DOF)
- Get Involved (Cal Volunteers)
- Water Shut-off Reporting Tool (Water board)
- Wifi Hotspot Finder (CPUC)
- Recovery Roadmap Survey (GoBiz)
- Share Innovative Technology Solutions (Tech Taskforce)
- Communication Hub (GovOps)
- Absentee Survey and Dashboard (GovOps/CalHR/CDT)
- Teachers Resource Portal
- Promise Campaign (OIS)
- Telework guidance (GovOps/DGS/CDT/CalHR)

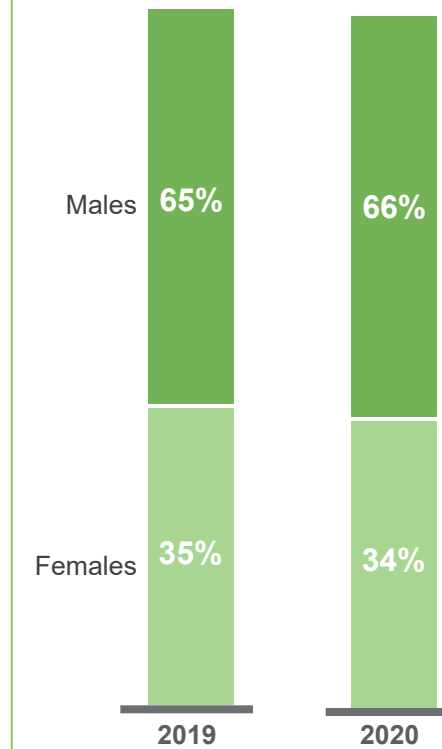
\*State run pandemic related initiatives which rapidly delivered emergency relief, services (or changes to services) and/or technology to Californians and/or the government workers who serve them.

## STATEWIDE IT WORKFORCE DEMOGRAPHICS

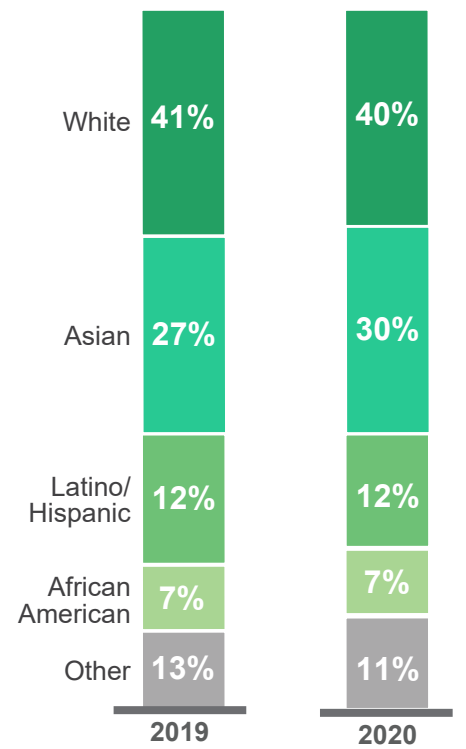
### State IT Employees



### Gender

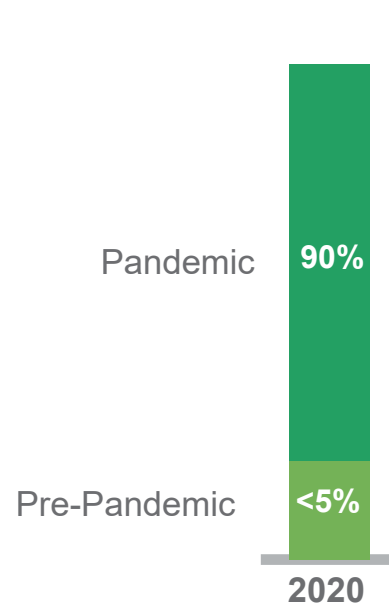


### Ethnicity



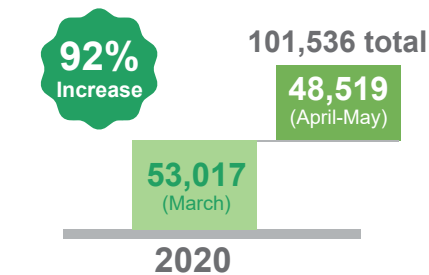
## WORKFORCE

### Percentage of Employees Teleworking

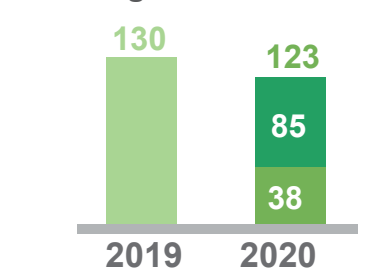


In the wake of the March shut down, state employees with telework-eligible jobs rose significantly compared to the telework percentages prior to the pandemic.

### Technology Capacity to Support Telework

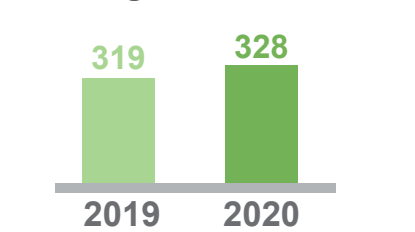


### Number of Classes Offered through CDT's Training Center

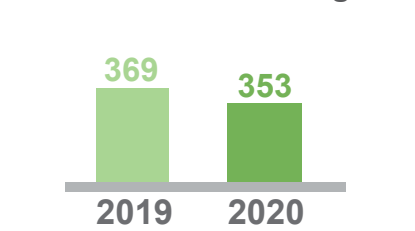


10 in-person classes were transitioned to online classes within two weeks.

### Number of Individuals Completing IT Leadership Training

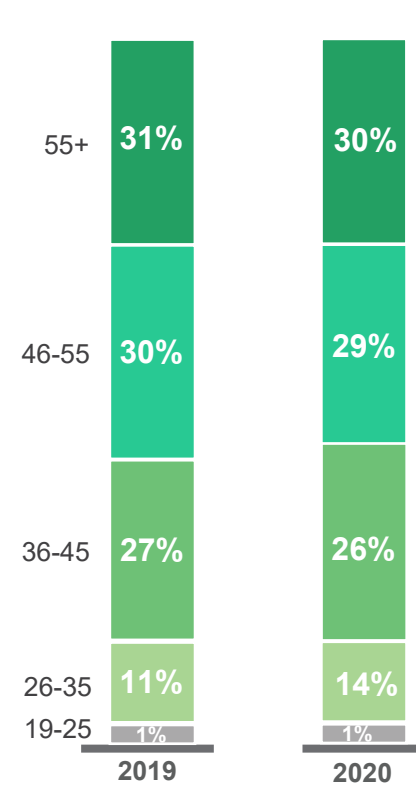


### Number of Individuals Completing Project Management and Procurement Training



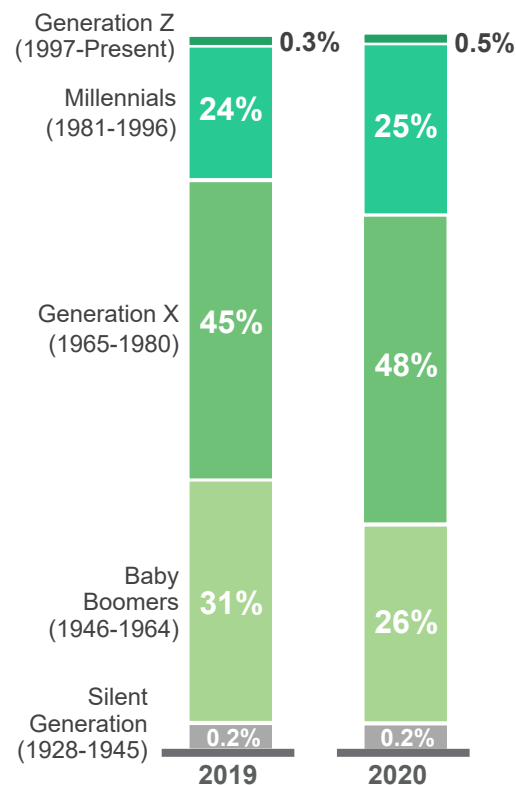
COVID-19 briefly disrupted 2020 training of individuals due to the transition from in-person to on-line courses.

### Age

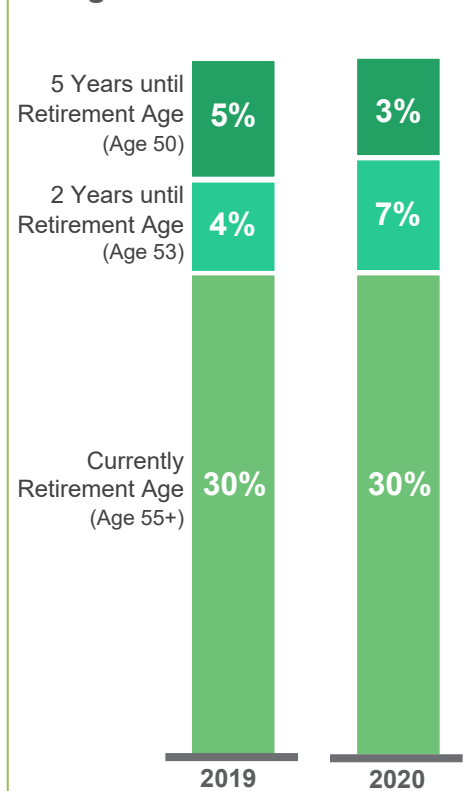


Source: CalHR

### Generation



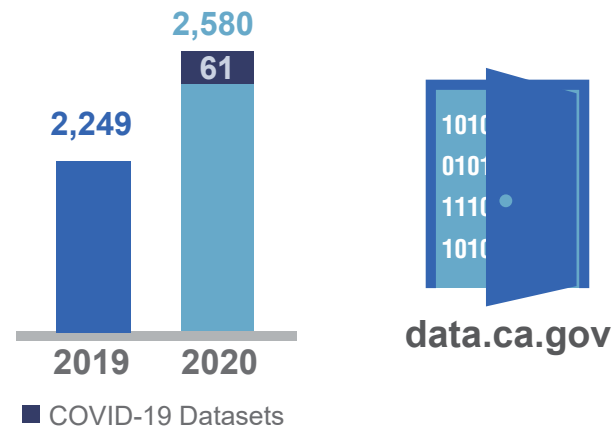
### Range to Retirement



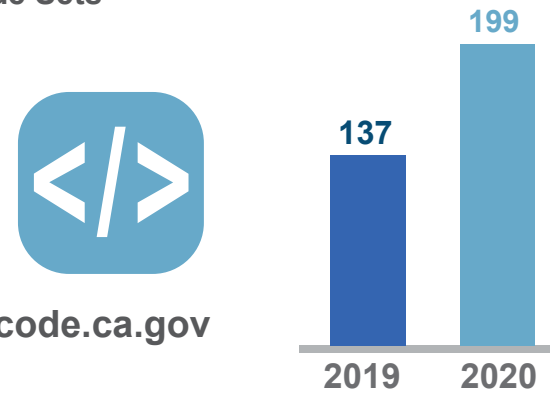
# Performance Metrics

## INNOVATION

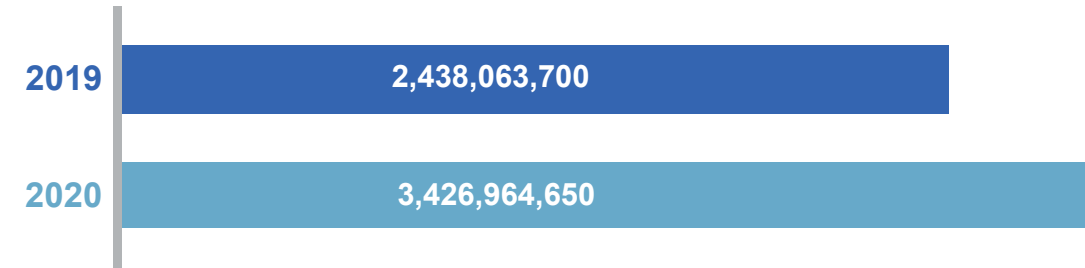
Number of Datasets Available to the Public



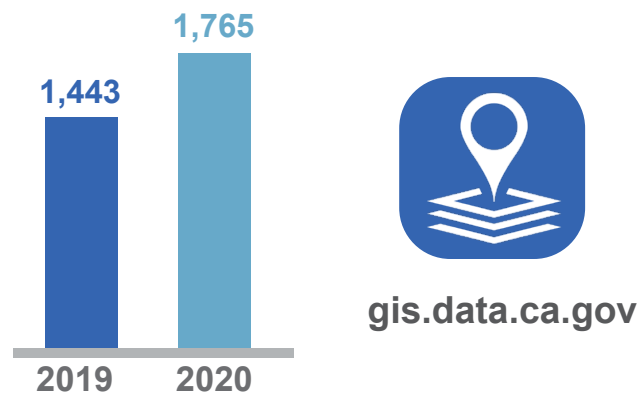
Number of State Contributed Open Source Code Sets



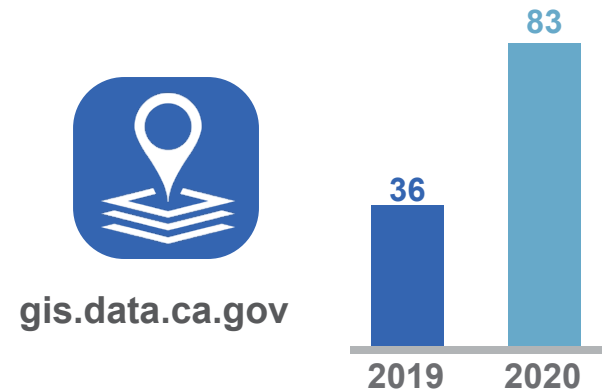
Number of Unique Page Views of All Websites Within the CA.gov Domain



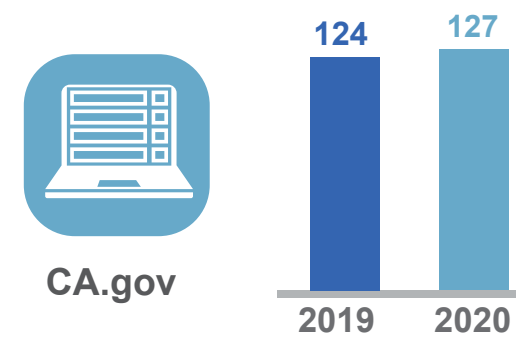
Number of GIS-based Datasets Available to the Public through the Statewide Geoportal



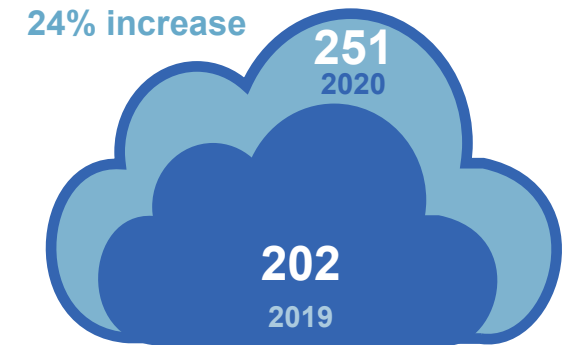
Number of GIS Applications Available to the Public through the Statewide Geoportal



Number of Digital Services Accessible Through the CA State Portal



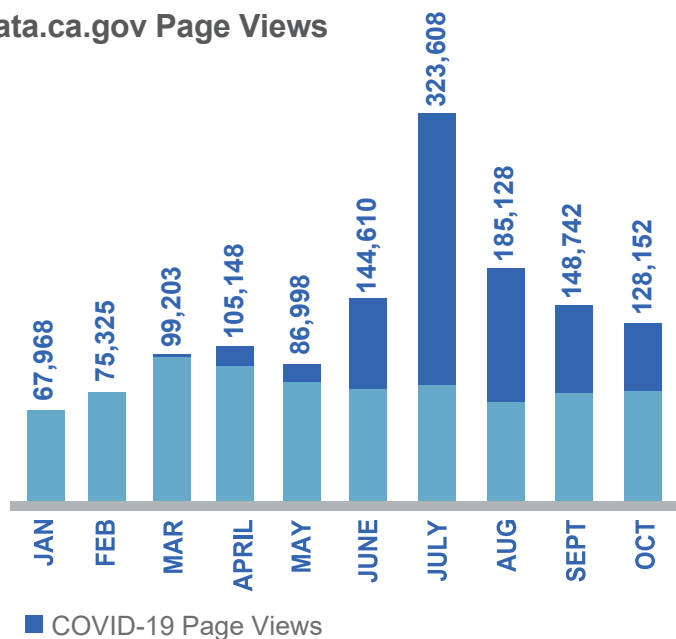
Number of Subscriptions to Software as a Service (SaaS) Cloud Services by State Entities Offered through the State Data Center



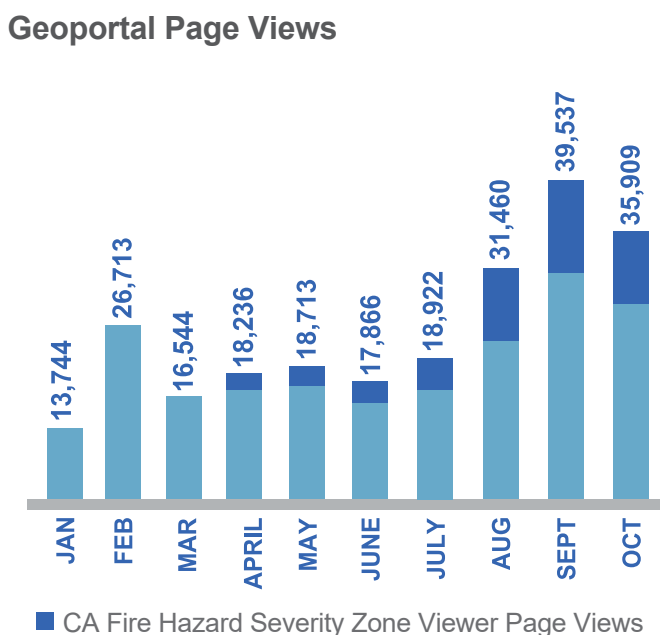
The number of digital services accessible through the California State Portal ([www.ca.gov](http://www.ca.gov)), a single navigation link for common public services.

The cloud-based SaaS solutions used by state entities offered through the state data center as part of its Vendor Hosted Subscription Services (VHSS).

Data.ca.gov Page Views



Geoportal Page Views

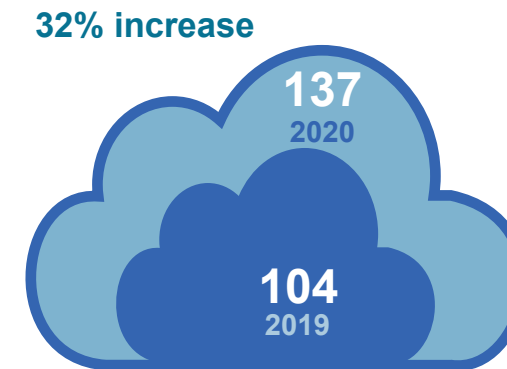


The page views on data.ca.gov significantly increased throughout the year due to the large amounts of COVID-19 datasets available to the public.

The increase in page views is due to the California Fire Hazard Severity Zone Viewer. This map was developed to assign a hazard score based on the factors that influence fire likelihood and fire behavior.

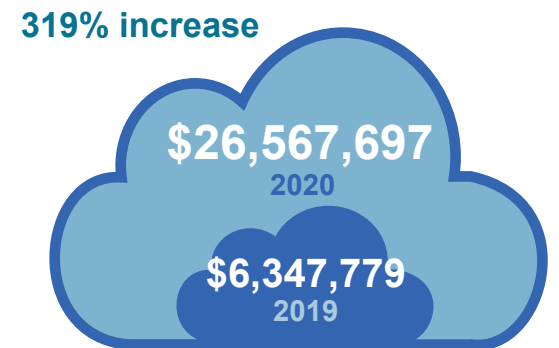
Number of Subscriptions to Infrastructure as a Service (IaaS) and Platform as a Service (PaaS) Cloud Services by State Entities Offered through the State Data Center

### Number of Subscriptions to IaaS/PaaS



The number of subscriptions to cloud-based IaaS/PaaS solutions by state entities offered through the State Data Center.

### Total Subscriptions for Services Utilized



The total amount spent on subscriptions by state entities using cloud-based IaaS and PaaS solutions offered through the State Data Center.



## GAUGING STUDENTS' PROGRESS ALONG THE EDUCATION PIPELINE

California has invested billions of dollars to improve its public education systems over the past decade. While some institutions have cited improvements during this period, the state still lacks enough pertinent data to follow students through key transitions along the education pipeline, making it difficult to identify and assess outcomes by surfacing the most effective programs and initiatives.

Currently, California is one of only eight states without a data system to track students' pathways from kindergarten through high school, then to college and on into the workplace. Such a longitudinal data system would permit California to evaluate education policies and investments and model those that prove most effective.

Last year the Legislature passed and awarded \$10 million for the California Cradle-to-Career Data System Act, establishing requirements for the development of a statewide data infrastructure that will provide information that ultimately will help more students attain their educational, career and life goals. The data system will ensure that educational, workforce, financial aid, and social service information is fully leveraged to address disparities in opportunities and improve outcomes for all students from cradle to career.

Throughout this year, the administration, with support from WestEd, a nonprofit, nonpartisan education research, development and services organization, will lead a process to design the

first phase of the California Cradle-to-Career Data System. As specified in the legislation, a broad spectrum of stakeholders will serve on a workgroup and several subcommittees. The workgroup will provide recommendations to the Governor's Office, who in turn will report out to the Legislature. CDT participates as a member of the workgroup and on the Technical, Security and Legal subcommittees.

Once deployed, the system aims to link data already collected by schools, colleges, social service agencies, financial aid providers and employers, to make it easier to:

- Identify the types of supports that help more students learn, stay in school, prepare for college, graduate, and secure a job.
- Provide information that teachers, parents, advisors, and students can use to identify opportunities and make decisions.
- Help agencies plan for and improve educational, workforce, and health, and human services programs.
- Support research on improving policies from birth through career.

California's statewide Cradle-to-Career Data System will promote data privacy and security and provide an integrated means to identify, evaluate and promote educational policies and programs that will improve the educational outcomes for all California students.

## ENABLING SUCCESSFUL PROJECT ESTABLISHMENT AND DELIVERY

### CDCR SUCCESSFULLY SHIFTS TO NEW CONTRACT MODEL TO SUPPORT SYSTEM MAINTENANCE

Since its inception as a very large strategic acquisition program, the Strategic Offender Management System (SOMS) technical services have been outsourced. CDCR and the state benefitted from procuring vendor services through a long-term contract to build, deploy, and maintain SOMS as the mission-critical management platform for offender management, but with the system in full maintenance and operations phase, CDCR needed to reduce cost and increase pace for delivering changes, fixes, and new capability.

CDCR completed the initiative to transition from a single integration vendor to smaller, focused contracts at the end of 2019. In 2020, CDCR has increased the new contract release rate from three per year to seven, with smaller releases each

month and larger releases every other month. Over two releases, the team deployed a major revision for the Department's restructured grievance and appeals process that significantly improves the process for incarcerated people and for staff. The shift to contracting with a number of smaller vendors rather than with one large vendor allows for more rapid and frequent releases of functionalities.

The new solution has allowed CDCR to develop and deploy a data-driven dashboard that provides the transparency CDCR needs to manage the process. The SOMS team has also more than doubled the rate of implementing business-driven changes and defect corrections since transition completed, all at a lower projected total cost in future years.

### OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT ACTS FAST FOR A WORTHY CAUSE

To recognize the frontline healthcare workers taking care of California's most vulnerable residents in response to COVID-19, Facebook donated \$25 million to the "Skilled Nursing Facility Hero Awards." The program provided stipends to qualified nurses worth \$500 each to help with the financial responsibilities nurses face as they provide care for older Californians, as well as their own families.

The award program required the Office of Statewide Health Planning and Development (OSHPD) to design a digital application that could process 50,000 stipends, more than 25-times its typical annual volume. Governor Newsom announced the stipend program at his April 3 press conference and the application launched five days later. OSHPD used tools that capitalized on new cloud infrastructure and containerized architecture. To save users time and

frustration, the application provided single sign-on authentication and was responsive on mobile devices.

The launch resulted in hundreds-of-thousands of new visitors to OSHPD's website, a level of traffic not seen by OSHPD's systems before. CDT assisted during the first few days after launch, helping to diagnose slowdowns and escalating issues with vendors that could rapidly provide technical support.

OSHPD was able to award the stipends to nurse heroes across the state, helping them avoid financial distress and continue practicing during the emergency, while saving hundreds-of-thousands of dollars in staff time to implement the program. The Department of Social Services was so impressed that it copied the code for its own residential care stipend program.



## ENABLING SUCCESSFUL PROJECT ESTABLISHMENT AND DELIVERY

### HUMAN-CENTERED DESIGN CANNABIS LICENSING SEARCH TOOL

The California Department of Technology (CDT) collaborated with state cannabis licensing authorities and others to launch a search tool that allows the public to find cannabis license information in one

place. The new unified search tool has information from all three of the state's cannabis licensing authorities – the Bureau of Cannabis Control (BCC), the California Department of Food and Agriculture (CDFA), and the California Department of Public Health (CDPH). The combined effort teams the licensing authorities with CDT, the California Health and Human Services Agency's Office of Innovation, and the Governor's Office of Business and Economic Development (GO-Biz).

The new search tool includes an interactive map and geolocation tools that will help consumers find licensed cannabis retailers near them. Included is a survey where users can submit usability feedback to the licensing authorities as they continue to refine the search tool.

The unified license search will be updated every 24 hours. The reimagined licensing website used as its foundation human-centered design to make it easy for the public to submit complaints and engage the appropriate department in one place.

The website is part of Governor Newsom's plan to consolidate the three cannabis-licensing authorities into a single Department of Cannabis Control to improve access to licensing and simplify regulatory oversight of commercial cannabis activity.

### CITY OF LA HOSTED AT STATE DATA CENTER

The City of Los Angeles looked to the California Department of Technology (CDT) to transfer its aging mainframe business services to the State Data Center. About 130 employees were part of the technical teams that represented CDT and the City of LA.

LA's data migration occurred February 26 and the process went so smoothly it seemed like just another day for both entities.

CDT credited a close partnership with the City's Information Technology Agency and other city departments involved in the migration, including public safety agencies and entities dealing with business applications and data.

Los Angeles Information Technology Agency Chief Information Officer Ted Ross said the move to migrate away from its 30-year-old legacy system to

the state's secure, cloud-based environment would greatly improve its ability to serve and protect the people of Los Angeles.

The many benefits the City of LA receives from the state include experienced 24/7 mainframe support, disaster recovery services, the state's purchasing power for licensing, and avoiding the cost of replacing aging equipment.

Other local governments can look to the successful migration of such a large city to the State Data Center for reassurance that such a move would be as smart as it is safe.



### CALIFORNIA'S BROADBAND ACTION PLAN

Access to broadband is essential for us to work, learn, and communicate. It is also important for obtaining government services. The pandemic showed clearly how broadband touches every part of our daily lives.

Affordable and reliable broadband access accelerates economic and workforce development as well as improvements to infrastructure, public safety, education, economy, and how the state engages residents. When the COVID-19 pandemic forced residents to start working from home and students to attend school online, it was clear that affordable and reliable broadband was a necessity for all Californians.

Governor Gavin Newsom tasked the California Broadband Council with developing a Broadband For All Action Plan to identify challenges and

opportunities in an effort to achieve broadband for all Californians. Through an open meeting process, the Council held numerous listening and public working sessions, heard public comment, and facilitated additional meetings to ensure that stakeholders had many opportunities to share expertise and opinions during the drafting process.

The Broadband For All Action Plan identifies today's needs as well as creates a new structure that will continue to meet the needs of California residents for years to come. The plan lays the foundation that will enable California to ensure that broadband is affordable and accessible to everyone – including traditionally unserved and underserved communities. As the plan is annually updated and its action items implemented, it will help the state close California's digital divide and make for a more equitable California.

### MAKING THE CONNECTION: CALCONNECT CONTACT TRACING SYSTEM

Following Governor Gavin Newsom's COVID-19 State of Emergency declaration in March, the California Department of Technology (CDT) and California Department of Public Health (CDPH) initiated the development for the California Confidential Network for Contact Tracing (CalCONNECT) system.

CalCONNECT came into being out of the emergency action that sought to procure, implement, and operationalize a program for statewide COVID-19 contact tracing. The action also redirected state staff to augment county health offices and created a virtual, centralized contact center and a contact tracing system.

The statewide contact tracing system and virtual contact center, implemented over 28 weeks, can support up to 61 county health offices and as many as 10,000 contact tracers. The system

exchanges COVID-19-related data with the state's secure system of record for electronic disease reporting and surveillance, the California Reportable Disease Information Exchange system, more commonly known as CalREDIE.

On May 13, just 10 days after contract award, the project launched the first system go-live pilot phase with Orange County. That phase completed June 5, bringing 14 counties live onto CalCONNECT. By November 16, 12 of 18 sprints were completed to 50 county health offices, allowing more than 6,000 contract tracers to become active on the system.





## FOSTERING A DYNAMIC AND UNIFIED TECHNOLOGY WORKFORCE

### CYBERSECURITY EDUCATION WORKFORCE DEVELOPMENT INDUSTRY CONVENING

The Sept. 2 convening brought together the California Cybersecurity Taskforce, Workforce Development, and Education Subcommittee and many leaders in California state government, the IT industry and academia in a virtual conference that focused on cybersecurity, education and building the future workforce. Participating government offices included California Labor and Workforce Development Agency, California Governor's Office of Emergency Services and California Department of Technology.

The purpose of the meeting was to bring together employers and educators to discuss their

commitment to assist students to fill 50,000 California entry-level employment cyber professional positions between 2020 and 2030 in critical, high-demand technology industry sectors.

Also discussed was the model curriculum recently developed for students to obtain a four-year undergraduate degree in cybersecurity. The curriculum includes a 2,000 hour on the job training component. Educators and employers talked about how apprenticeships can fill this requirement.

### CalCareers/ECOS SYSTEM EXPEDITES MEDICAL HIRING

To meet the urgent need to hire medical personnel in response to COVID-19, California Department of Human Resources (CalHR) received a directive from the Governor's Office to quickly make changes to the CalCareers/ECOS system, the public-facing jobs portal for all civil service jobs within the State of California.

The Examination and Certification Online System (ECOS) is the portal's administrative back end, which is used by personnel analysts and hiring managers statewide to announce job vacancies, and view applicant responses from CalCareers, the system's front end. Working together with staff from the California Department of Public Health, Emergency Medical Services Authority (EMSA), and program staff within CalHR, the IT team made necessary changes to the CalCareers/ECOS system. The changes enabled the state to quickly hire large numbers of doctors, nurses, paramedics, and other personnel needed in order to provide capacity for staffing temporary medical centers around the state.

One of the primary challenges: EMSA had a separate system, which contained applicant licensure records. Development staff from CalHR worked together with technical staff from EMSA to coordinate a record-matching protocol. This enabled the CalCareers/ECOS system to recognize applicants that EMSA had pre-screened and identified as licensed medical personnel. Once this process was established and implemented, CalHR business staff was tasked with processing mass hiring using the system's new features.

To accommodate a large increase in website traffic in the wake of the statewide call for applicants, CalHR IT team expanded server capacity on a temporary basis for CalCareers.

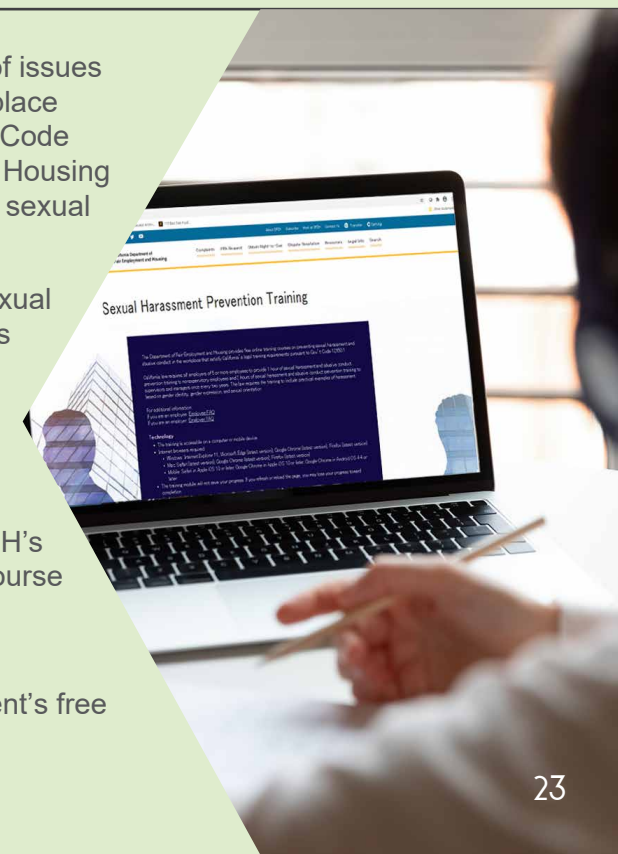
CalHR received approximately 11,000 applications. In the end, more than 5,400 medical personnel were deployed. The success of this initiative enabled the state to hire many medical personnel quickly who became available as needed for the pandemic.

### SEXUAL HARASSMENT PREVENTION WEB-BASED TRAINING

The rise of the #metoo movement brought an increased awareness of issues associated with sexual harassment and abusive conduct in the workplace and resulted in the passage of SB 1343, now California Government Code 12950.1. The new law gave the Department of Fair Employment and Housing (DFEH) the responsibility to develop two training modules to address sexual harassment and abusive behavior.

The law also requires most employees in California to complete a Sexual Harassment Training course. Employers with five or more employees are required to provide one hour of sexual harassment and abusive conduct prevention training to their nonsupervisory employees, and two hours of training to their supervisors and managers once every two years. What is unique about DFEH's sexual harassment prevention training is that unlike training from other organizations, such as some chambers of commerce and for-profit companies, DFEH's training is offered free of charge. The web-based, interactive video course is available in English, Spanish, Vietnamese, Korean, Tagalog and Chinese.

During 2020, more than 200,000 employees completed the department's free training, with 107,000 of them completing their training in December.



## FOSTERING A DYNAMIC AND UNIFIED TECHNOLOGY WORKFORCE

### THE MOVE TO ONLINE LEARNING

The COVID-19 pandemic that drove the California State University (CSU) system online did not stop faculty and staff from quickly adjusting and shifting to an online model for its nearly half-million students to provide a quality education. As the spring term ended, CSU made an early decision to plan for online courses in the fall. The decision gave faculty the time and opportunity to become familiar with the latest technology and best practices for online teaching.

CSU was one of the first university systems to make the decision in Fall 2020 to deliver most of its instruction remotely. More than 1,400 faculty trained to teach effectively online over the spring and summer through the Academic Technology Services Department at the Chancellor's Office and augmented by offerings at each of the campuses.

As online courses offer a learning experience that is qualitatively different from classroom instruction, faculty were introduced to new methods to structure and present their course content to maximize the learning experience. Faculty focused on retooling their offerings through best practice methodologies to enhance student engagement and collaboration, while allowing new ways for students to demonstrate understanding, lead peer discussions, and form new connections.

These best practices may ultimately help enhance overall teaching and learning experiences. Professors take the practices beyond the virtual sphere to inform and enhance their overall pedagogical toolkits. The switch to online teaching has allowed many professors to try new teaching tactics even while offering students greater flexibility and transferable skills.



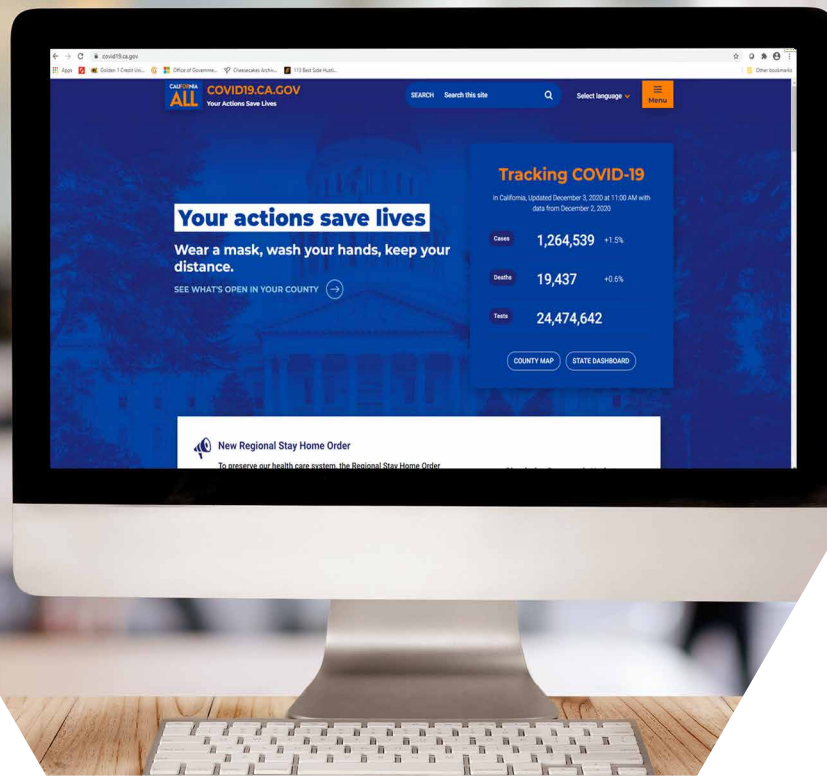
### STATE CONTROLLER'S OFFICE (SCO) LAUNCHES EMPLOYEE SELF-SERVICE PORTAL

Cal Employee Connect (CEC) is an employee self-service web application providing approximately 300,000 state civil service and California State University employees with online access to more than three years' worth of earnings data, W-2s, and leave balance data, information that previously was available only in paper form.

The original concept for the CEC application provided a means of delivering timely and accurate payroll data to the entire state workforce, while eliminating the paper version. SCO annually spent more than \$1 million printing direct deposit notices, which did not include costs of each department sorting and distributing the notices statewide every payday. Putting this in physical perspective, the act of printing direct deposit notices requires 48 pallets of pressure-sensitive, self-sealing paper stock every year. Laid end-to-end, the pages would stretch 660 miles.

Fortunately, the application was ready to go into production just as the COVID-19 pandemic forced the state workforce to start working remotely. Rapid deployment of the new application enabled SCO to stop printing earnings statements and distribute them electronically, creating the opportunity for SCO to save hundreds of thousands of dollars annually.

“ SCO annually spent more than \$1 million printing direct deposit notices, which did not include costs of each department sorting and distributing the notices statewide every payday. ”



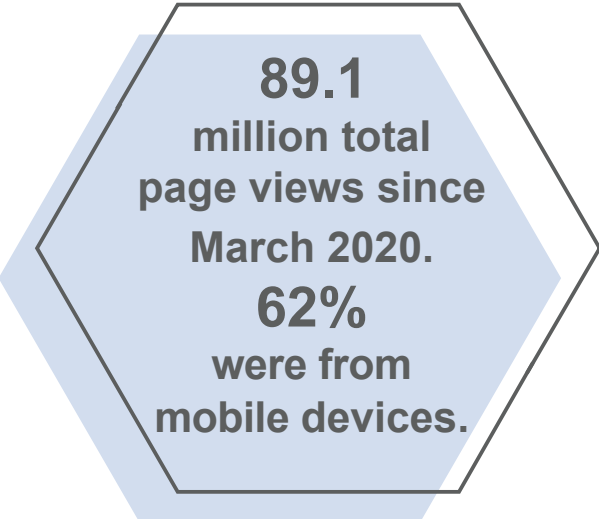
## PROVIDING EFFICIENT AND EFFECTIVE GOVERNMENT SERVICES THROUGH INNOVATION

### COVID-19 WEBSITE CREATED TO OFFER CRITICAL REAL-TIME INFORMATION TO CALIFORNIANS

At the onset of COVID-19, California was working to understand the pandemic and provide timely and accurate information about the virus. The state, however, lacked a central hub for this high-demand information.

In response, the CA.gov Alpha Team was tasked with developing the California COVID-19 emergency response website, covid19.ca.gov. The team was a mix of state employees from the Office of Digital Innovation (ODI) and California Department of Technology (CDT), along with civic technology experts working to reimagine California's online presence. The team worked in collaboration with the California Health and Human Services Agency (CHHS), and Office of Innovation to create a scalable, accessible and stable website that was easy to update in a fast-changing public health crisis. The CA.gov Alpha Team set up its first working version of the page in just four days. The result was a fast and user-friendly website that runs on any kind of hardware and at any bandwidth.

The COVID-19 website proved a huge success. On the first day of launch, the site scaled to more than 200,000 users with no outages. On the day of the Governor's stay-at-home order the website served critical content to 1.4 million users.



### FRANCHISE TAX BOARD AUTOMATES QUALITY ASSURANCE

The Franchise Tax Board (FTB) is expanding its use of automation testing tools to optimize the use of its resources and better serve its customers.

FTB is using test-automation technology that enables teams to test customer-facing web applications quickly, starting from the user interface, all the way to back-end mainframe systems. The goal is to ensure the accuracy of FTB's complex processes. By using test data management and test automation services, FTB's technical teams are reducing the ongoing maintenance needs for validation services,

including time-consuming test environment preparations and completion of evolving validation workloads. This benefits FTB in running its existing technology stack and the addition of the upcoming Enterprise Data to Revenue 2 project.

The enhanced automation approach is expected to achieve full implementation in 2022. This will allow the test automation resources to develop the program framework and processes to ensure long-term use and reusability. It also provides FTB flexibility as it upgrades its tax administration system functionality.

### DASHBOARDS DEVELOPED TO INFORM LEADERS DURING THE COVID-19 CRISIS

In March 2020, when COVID-19 was designated as a public health emergency, the Governor's Office had a critical need to gather, organize and analyze data from numerous departments and external sources. To make this data easily and quickly useable, the Governor and other emergency services decision makers needed interactive and real-time data visualizations. Within two days of identifying the need, a CDT team designed and developed an online dashboard that displayed the progress of cases in California by county. In the months since, CDT has developed

20 additional dashboards that showcase the data and its trends about cases, hospitals, bed surge, medical staff surge, logistics, ventilators, unemployment and labor.

These dashboards were used for the Governor's daily briefings, with a subset published to the public on covid19.ca.gov. In order to refresh the dashboards daily, the team works closely with the California Governor's Office of Emergency Services, California Department of Public Health, Department of Social Services, and Labor & Workforce Development Agency.

## PROVIDING EFFICIENT AND EFFECTIVE GOVERNMENT SERVICES THROUGH INNOVATION

### CORONAVIRUS RELIEF FUND REPORTING TOOL

The Coronavirus Aid, Relief, and Economic Security (CARES) Act appropriated funds to reimburse eligible healthcare providers for healthcare-related expenses or lost revenues attributable to the coronavirus. Recipients of these funds agreed to comply with reporting requirements as specified by the federal government.

The Department of Finance (DOF), in cooperation with the California Department of Technology, developed the Coronavirus Relief Fund Reporting Tool. The tool is a web portal that assists the DOF in collecting data to meet federal expenditure reporting requirements related to Coronavirus Relief Fund payments.

The portal supports quarterly reporting by cities, counties, community colleges, and state agencies and collects data reported by the Department of Education for nearly 2,000 local education agencies.

More than 600 local users are expected to enter data in the portal each quarter between September 30, 2020 and June 30, 2021, making California compliant with federal reporting requirements.

### CALPERS TAKES THE STRESS OUT OF FINDING A HEALTH CARE PLAN

With more than 2.1 million members, the California Public Employees' Retirement System (CalPERS) is the second largest provider of health care benefits in the United States. Health benefits decisions are highly personal and complicated, and each year CalPERS members can adjust their health coverage during Open Enrollment. One of the most important factors to consider is whether a change in health plan will require a change in primary care provider.

To assist state employees find the best plan, CalPERS developed the Health Plan Provider Network Search tool. The tool simplifies the process by allowing members to search for health plans by searching key factors, like their favorite primary care provider or medical network to determine if a selected health plan will meet their needs. This search tool reduces the likelihood that a member will mistakenly choose a health plan that doesn't contract with their care provider.

### CDCR BRINGS EDUCATION AND HOPE TO THE INCARCERATED

The California Department of Corrections and Rehabilitation (CDCR) provides bachelor degree programs to its inmates. The COVID-19 pandemic interrupted these programs, as outside instructors were not allowed inside CDCR institutions, a move to protect inmates and correctional staff from being exposed to COVID-19. In order to meet this challenge, CDCR procured, configured, tested and customized a Learning Management System with the capability to work in a custody environment and support a complete distance-learning model including video conferencing between an instructor and inmates inside an institution classroom.

Working with CSU-Los Angeles, a cohort of approximately 13 students began their final semester and completed bachelor degrees at the end of December 2020 at California State Prison, Los Angeles County. The same

technology will support the bachelor degree program at the California Rehabilitation Center in Norco, where 10 inmates will attend their first bachelor degree class in an accelerated program scheduled for completion in December 2021. CSU-Sacramento will begin its bachelor's degree programs at Mule Creek State Prison and Folsom State Prison in January 2021 with a cohort of 20 student inmates. This program was delayed due to a COVID-19 outbreak at Folsom State Prison.

The ability for these approximately 43 incarcerated students to work toward and complete their degrees will have a profound impact on their lives and contribute to their continued rehabilitation upon release. CDCR expects the college programs to expand considerably due to the distance learning collaboration between CDCR and California colleges.

### CALIFORNIA HORSE RACING INFORMATION SYSTEM...VERSION 2

The California Horse Racing Board (CHRB) has a big job. It is responsible for the integrity, viability, and safety of the California horse racing industry. CHRB regulates pari-mutuel wagering for the protection of the public by promoting horseracing, breeding, and wagering opportunities. It also fosters safe racing through the development and enforcement of track safety standards and regulations for the health and welfare of all participants. To ensure compliance, CHRB had been relying on an out dated information system – but no longer.

Modernization of the California Horse Racing Information System ("CHRIS") came as a switchover from a 1985 mainframe program. CHRIS integrates multiple disparate data, image, and document sources. To accomplish the

switchover, CHRB used two full-time staff and one data conversion contractor to implement the California Horse Racing Board's licensing business rules with the intention of flexibility, and compatibility with Fi\$Cal, California's financial information system.

The project offers CHRB a better information management platform while increasing ease of use and transparency for the user.





## PROVIDING EFFICIENT AND EFFECTIVE GOVERNMENT SERVICES THROUGH INNOVATION

### HELPING STATE PUBLIC HEALTH OFFICIALS SCALE UP TECHNOLOGY TO TRACK COVID CASES

The state's disease reporting environment, CalREDIE, was created to improve the effectiveness of surveillance activities and the early detection of public health threats through the collection of complete and up-to-date statewide information. Pre-pandemic, the system had been able to handle the volume of reported incidents without a problem. When COVID-19 incidences began to soar, CalREDIE struggled to manage the huge increase in volume of positive and negative lab results that began flooding the California Department of Public Health (CDPH).

The need was obvious for a new platform able to handle the increased volume to support disease surveillance and pandemic response. California required quickly creating a new system specifically dedicated to tracking and reporting—that became the COVID-19 Reporting System (CCRS).

Procurement professionals from CDT and CDPH, assisted by outside consultants, took a phased, challenge-based approach, putting out a descriptive problem statement to the vendor community. In the first phase, vendors state their qualifications and experience to solve the problem. Vendors who qualified for the second phase are asked to complete a proof of concept. In the final phase, the procurement team selects one or more vendors and contract negotiations begin.

With CCRS, the process took only 14 days from beginning to contract execution and included the participation of 39 vendors. The team awarded the contract on August 24, and held a kick-off meeting and began sprint planning the same day. Phase 1 went into operation on October 3.

Apart from moving quickly to stand up CCRS, this procurement also increased competition and enabled the state to achieve the best solution to the problem, and one that was most effective and efficient from a cost perspective.

“With CCRS, the process took only 14 days from beginning to contract execution and included the participation of 39 vendors.”

### THE PROMISE OF AI IN CALIFORNIA GOVERNMENT

Technology is transforming how humans and machines work together. In particular, Artificial intelligence (AI) has the potential to transform government beyond our imagination, enabling greater efficiency while improving the accuracy and effectiveness of decision-making and promoting equity in service delivery.

As AI and AI-enabled tools offer the potential to transform the nature and scale of government work and services, the California Department of Technology (CDT) embarked on an initiative to promote a strategy and standard approach for implementing AI within state government. Aware of the pitfalls that can be inherent in its use, the state will implement AI and AI-enabled tools in a responsible and ethical manner.

California's AI initiative has three primary objectives.

1. The initiative must demonstrate how AI can improve California's delivery of digital services. This is the area of focus in fall 2020 with an intent to help state government entities become aware of AI's value in service delivery.

As part of the initiative, the AI Community of Practice launched its first quarterly meeting with a presentation, "What is AI?" The session discussed

various AI portfolio technologies and examined the basic nature of AI: What it can do and what it cannot do.

Another part of the initiative saw CDT partner with the CITRIS Policy Lab and AI Security Initiative at UC Berkeley to develop recommendations to guide California's AI Strategy, scheduled for release in early 2021.

2. The initiative must provide a strategy and guidelines that cover the ethical and responsible use of AI.

This second focus is scheduled to begin in early 2021 and will key in on measures to implement AI ethically. The AI Community of Practice will develop a state AI Framework and Strategy along with applicable AI policies, if needed.

3. The initiative must provide a practical and pragmatic approach to implementing AI technology and data analysis methods.

Starting in spring 2021, the effort plans to focus on hands-on deliverables such as playbooks, an AI Vendor Pool and training and education sessions to help drive AI adoption.

### CalVax: CALIFORNIA'S COVID-19 VACCINE DISTRIBUTION SYSTEM

Late in 2020, with the approval of new anti-Covid vaccines, the state faced a new challenge: How to track, distribute, and manage the flow of these vaccines to the health care entities that would administer the vaccine to the state's nearly 40 million residents. The solution was to create a new COVID-19 vaccine distribution system—CalVax—and to launch it as soon as possible.

As time was a factor, the team decided to approach the project with a Request for Information (RFI) challenge-based procurement. This allowed the team to better understand what preparations other states were making to receive and distribute the vaccine. Vendors responded to the RFI and their answers helped inform all three phases of the resulting procurement.

The key benefit of the challenge-based procurement was its speed: The CalVax procurement process, from problem statement to contract execution, took only 35

days. Before the pandemic, procurement efforts of this scope could take as long as 12 months.

Beyond speed, another benefit of this approach could be found in the quality of the solution. Vendors who participated in the proof-of-concept phase were encouraged to use off-the-shelf technology that could be customized quickly to meet the state's needs. Ultimately, this design strategy would give the selected vendor a head start to deliver the solution for statewide vaccine delivery, storage and distribution.

The final phase of the negotiations focused on what would it take to scale the system as well as to secure it, maintain it, and make it production ready. The team recognized that such considerations were important to include in a proof-of-concept discussions, and critical to delivering a robust solution to stakeholders quickly. The approach allowed the team to execute a vendor contract on December 14.

# Thank you

## THE VOLUNTEER MODELING TEAM THAT COULD... AND DID

At the onset of the pandemic, California was working to understand COVID-19 in an environment where it had only partial, incomplete, and contradictory information. It was at a point when the state had suffered 18 deaths while the U.S. had lost fewer than 500 people to the disease. The disease's lethality was unclear, and it was inconceivable that a state with 40 million constituents and the world's fifth-largest economy would enter a partial lockdown.

California was effectively flying blind. Wide-scale testing was unavailable, as the Centers for Disease Control had not yet approved tests, and models of COVID case projections suffered from numerous issues. Such issues could be viewed only at the aggregated state level and not at a more granular county level. No forecast existed for how mitigation steps such as social distancing could affect the epidemic, nor did modeling of critical resources such as ICU beds and ventilators.

Initially, the group assigned to work on the problem consisted of representatives from the California State Government, along with a handful of Silicon Valley volunteer technologists. One of the state epidemiologists had a contact with Johns Hopkins Bloomberg School of Public Health, where the infectious disease dynamics group had devised a COVID case projection model. The model would allow the state to develop county-level case projections and create different situational scenarios such as compliance rates with stay-at-home orders. Unfortunately, the model was not tuned for California's demographics and took more than half a

day to compute — consuming valuable time against an exponentially growing virus.

In just two days, the group of California technologists, public health officials, Johns Hopkins epidemiologists, and Silicon Valley engineers came together to retrofit and operationalize a relatively sophisticated model of the epidemic — providing a line of sight on how policy interventions could affect spread and allocate critical resources like ICU beds and ventilators. This information was instrumental in the decision to enact the first stay-at-home order in the country, which studies show may have averted as many as 1.7 million cases in California by April 6, 2020. Additionally, the model that assisted numerous state and national governments was quickly scaled-up to provide rapid forecasts at the national level. In May 2020 alone, it used over 100-million computer hours for its forecasts.

Like all good models, the results stimulated rich discussions and required a deeper degree of forecasting. Policy questions changed as the pandemic progressed. Since those early days, the team made substantial updates to the model and examined new and more complex scenarios in response to the evolving situation. These continued updates are necessary for providing pressing and relevant information to policymakers, as the model continues to inform policy decisions in California, other states, and among international partners.

This was an example of how motivated individuals, many of them who volunteered their time and skills, were able to leap over policy and political barriers and worked as a team for the benefit of California.

## THANK YOU VOLUNTEERS!

### DONATION AND SUPPLY INTAKE PORTAL

At the onset of the COVID-19 response, materials were not readily available. However, given the selflessness of volunteers, the California Governor's Office of Emergency Services (Cal OES) State Operations Center soon became inundated with offers of help from thousands of donors and vendors throughout the world.

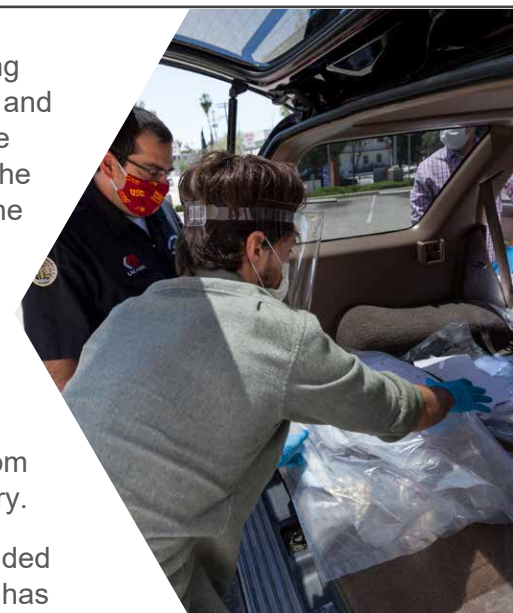
Members of the Logistics and Commodities Task Force quickly realized they needed a better solution for managing the offers and efficiently passing them to the procurement team.

The solution was a single source-of-entry for new supply or donation leads—the Donation and Supply Intake Portal, which allows the Logistics and Commodities Task Force to organize and validate leads and successfully procure supplies and equipment.

The portal has helped to identify hundreds of legitimate suppliers and develop a sustainable pipeline for the duration of the pandemic, and ensures

valid leads are being handled in a timely and orderly fashion. The workflow built into the portal centralized the collection of key data related to the procurement process and allowed for improved reports and dashboards from beginning to delivery.

Through this expanded workflow, the state has been able to identify a lead and procure goods while capturing the necessary documentation and records for more effective financial management and federal reimbursement.



### THANK YOU TSG VOLUNTEERS

The Technology Solutions Group (TSG) was an informal team comprised of state technology leaders, private sector technology businesses and venture capital partners who shared similar concerns about the impact of COVID-related issues. Led by CDT and former advisor to the Governor Michael Wilkening, the TSG served as a central clearinghouse to identify solutions for immediate COVID response needs and beyond. Soon after it began, the group launched a web portal that offered organizations of all kinds an opportunity to submit Covid-related technology solutions to the state.

After first convening in spring 2020, the team had many successes. It was instrumental in expediting emergency procurements for the

state through a challenge-based approach, and helped the state evaluate numerous approaches to exposure notification, which led to the implementation of CA Notify.

Along with the technology and venture capital sectors, the dedicated group included 21 student intern volunteers. Many of those young volunteers may turn out to be California's future technology leaders and will remember the good work they did on behalf of California's residents through their efforts as part of the Technology Solutions Group.



# THANK YOU VOLUNTEERS!

# SPECIAL THANKS TO OUR VOLUNTEERS AT INNOVATION & TECHNOLOGY TASKFORCE AND TSG

## STEPPING UP TO MAKE A DIFFERENCE



Venture capitalists Josh Felser and Bill Trenchard are busy professionals with their own successful businesses. Although heavily involved in their own work, they used the little time they had available to help others.

Early in the pandemic, the two noticed that food banks were having trouble keeping their shelves stocked. Their research showed several reasons for the shortages, including a massive disruption of the food supply chain that made it difficult for food banks to find enough food; also, food banks were paying too much. They feared these shortages could affect California's free lunch programs.

Immediately, the pair shifted to volunteer mode to do something to help Californians who were facing food insecurity.

Adept at technology and armed with determination, the duo pulled together a group of concerned professionals to talk about food insecurity issues and how best to help food banks locate and secure needed supplies. That group included the California Department of Technology (CDT), as well as Michael Wilkening, who was the Innovation and Digital Services Special Advisor to Governor Gavin Newsom.

What resulted was the creation of the Technology Solutions Group (TSG); an informal team comprised of state technology leaders and private sector technology and venture capital partners who shared similar concerns about the impact of COVID-related issues. The purpose of the TSG was to serve as a central portal to provide equal access and transparency to organizations that have viable technologies, and to identify solutions that can meet the immediate need and beyond.

The TSG looked at several food bank solutions in the market until they hit upon the right fit. The selected solution was a web-based marketplace of suppliers that could connect directly to food banks.

Working with TSG members and civic innovators Brian Purchia, Jay Nath and Kamran Saddique, the team built a special "food bank" customer designation portal for suppliers to sell discounted food. Best of all, the services were free to food banks. The portal went live in only a week and served as a food marketplace to connect farms and farmers with organizations in need... especially food closets.

"I saw a way to use my network of people to solve large problems faster than they might normally take," Felser said. "I wanted to contribute to the challenge in whatever way I could."

Trenchard agreed: "We have the best tech infrastructure in the world. California should be seen as a leader – a beacon on this."

Adele Li

Aishani Aatresh

Amol Punjabi

Angela Winegar

Arjun Peri

Benjamin Felser

Bill Trenchard

Bob Kocher

Brandon Wang

Brian Purchia

Caroline Brockett

David Bill

DJ Patil

Isabelle Zhou

Jacob Young

James Everingham

Jeffery Marino

Jinnah Hosein

Joe DiStefano

Joshua Cua

Joshua Felser

Kara DeFrias

Kit Rodolfa

Leo Jacoby

Lola Lafia

Luke Bender

Luna Zirpoli

Mariel Rosic

Mark Evangelisti

Matthew O'Conner

Miles Todzo

Noah Millman

Oscar Hong

Roger Magoulas

Ron Bodkin

Sanya Ohri

Sarah Russell

Shreyas Parab

Spencer Yen

Todd Park

Tricia Wang

William Yu



# ACKNOWLEDGMENTS

We would like to acknowledge the following individuals and thank them for their contributions to the California Information Technology Annual Report.

**Adam Dondro**, Agency Chief Information Officer, California Health and Human Services Agency  
**Adria Jenkins-Jones**, Chief Deputy Director, California Department of Human Resources  
**Amy Palmer**, Deputy Secretary of Communications, California Government Operations Agency  
**Andrew Chin**, Chief Information Officer, San Francisco Bay Conservation & Development Commission  
**Angela Shell**, Deputy Director and Chief Procurement Officer, Department of General Services  
**Beth Cousins**, Chief Information Officer, California Governor's Office of Emergency Services  
**Bill Glaholt**, Chief Information Officer, California Horse Racing Board  
**Brandon Wales**, Acting Director, Cybersecurity and Infrastructure Security Agency  
**Brian Ferguson**, Deputy Director of Crisis Communications & Media Relations, California Governor's Office of Emergency Services  
**Chad Crowe**, Chief Information Officer, California Department of Human Resources  
**Christian Farland**, Chief Information Officer, California California Public Employees' Retirement System  
**Christopher Childs**, Chief Information Officer, California Highway Patrol  
**Dan Marksburly**, Chief Technology Officer, California Department of Forestry and Fire Protection  
**Gary Nodine**, Deputy Director and Chief Information Officer, California Department of Public Health  
**George Okamoto**, Agency Chief Information Officer, Labor and Workforce Development Agency  
**Gurinder Bains**, Chief Information Officer, Student Aid Commission  
**Isaiah Mall**, Chief Information Officer, California Department of Veterans Affairs  
**Jacob Roper**, Assistant Secretary for Communications, California Government Operations Agency  
**James Parsons**, Lieutenant Colonel and Cyber Network Defense Chief, California Military Department  
**Jason Piccione**, Agency Chief Information Officer, Business, Consumer Services and Housing Agency  
**Jay Song**, Chief Information Officer, California Department of Forestry and Fire Protection  
**Jennifer Benson**, Chief Information Officer, California Department of Toxic Substances Control  
**John Sulenta**, Acting Chief Information Officer, Franchise Tax Board  
**Julie Lee**, Undersecretary, California Government Operations Agency  
**Julie Whitten**, Assistant Deputy Secretary for Innovation and Accountability, California Government Operations Agency  
**Justyn Howard**, Acting Agency Chief Information Officer, Government Operations Agency  
**Keith Clement**, Chair, Workforce Development /Education Subcommittee and Professor, California State University, Fresno  
**Ken Ketsdever**, Chief Information Officer, California Department of Aging  
**Ken Kojima**, Chief Information Security Officer, California Department of Corrections and Rehabilitation

**Keson Khieu**, Chief Information Officer, Emergency Medical Services Authority  
**Kim McCoy Wade**, Director, California Department of Aging  
**Marcie Kahbody**, Deputy Secretary and Agency Chief Information Officer, California State Transportation Agency  
**Mario Garcia**, Deputy Commander of Cal-CSIC, California Governor's Office of Emergency Services  
**Mark Ghilarducci**, Director, California Governor's Office of Emergency Services  
**Meredith Williams**, Director, California Department of Toxic Substances Control  
**Michael Berman**, Chief Information Officer, Chancellor's Office, California State University  
**Michael Drake**, President, University of California  
**Michael Valle**, Chief Information Officer, Officer of Statewide Health Planning  
**Michael Wilkening**, Special Advisor on Innovation and Digital Services, Office of Governor Gavin Newsom  
**Patrick Covello**, Warden, Mule Creek Prison  
**Rick Hill**, Warden, Folsom State Prison  
**Rita Gass**, Chief Information Officer, Employment Development Department  
**Robert Peterson**, Chief Information Officer, Department of Food and Agriculture  
**Rodney Okamoto**, Chief Information Officer, Department of Education  
**Rosanna Nguyen**, Chief, IT Consulting Unit, Department of Finance  
**Russ Nichols**, IT Director and Agency Chief Information Officer, California Department of Corrections and Rehabilitation  
**Sandy Ynostroza**, Acting Chief Information Officer, Department of Social Services  
**Sergio Gutierrez**, Agency Chief Information Officer, California Environmental Protection Agency  
**Steve Nash**, Chief Information Officer, Department of Fair Employment & Housing  
**Stuart Drown**, Deputy Secretary for Innovation and Accountability, California Government Operations Agency  
**Suzie Changus**, Chief Information Officer, California Prison Industries Authority  
**Tamara Colson**, Acting Chief Information Officer, Bureau of Cannabis Control  
**Tara Armstrong**, Chief Information Officer, Employment Training Panel  
**Thomas Boon**, Chief Information Officer, Governor's Office of Economic Development  
**Tim Garza**, Agency Chief Information Officer, California Natural Resources Agency  
**Timothy P. White**, Chancellor, California State University  
**Todd Boltjes**, Chief Information Officer, State Controller's Office  
**Tom Lupo**, Chief Information Officer, Department of Fish and Wildlife  
**Wendy Weaver**, Chief Information Officer, California Department of Conservation  
**Wesley Major**, Chief Information Officer, Department of Finance

We would also like to thank California Department of Technology staff for contributing to the development of this report.

# ABBREVIATIONS AND ACRONYMS

<b>AI</b>	Artificial Intelligence	<b>EBT</b>	Electronic Benefit Transfer
<b>BCC</b>	Bureau of Cannabis Control	<b>ECOS</b>	Examination and Certification Online System
<b>CalCSIC</b>	California Cybersecurity Integration Center	<b>EDD</b>	Employment Development Department
<b>CalFire</b>	California Department of Forestry and Fire Protection	<b>EMSA</b>	Emergency Medical Services Authority
<b>CalOES</b>	California Governor's Office of Emergency Services	<b>ETP</b>	Employment Training Panel
<b>CalPERS</b>	California Public Employee's Retirement System	<b>FTB</b>	Franchise Tax Board
<b>CARES</b>	Coronavirus Aid, Relief, and Economic Security Act	<b>GIS</b>	Geospatial Information Systems
<b>CDCR</b>	California Department of Corrections and Rehabilitation	<b>GO-Biz</b>	Governor's Office of Economic Development
<b>CDFW</b>	California Department of Fish and Wildlife	<b>IaaS</b>	Infrastructure as a Service
<b>CDFA</b>	California Department of Food and Agriculture	<b>IT</b>	Information Technology
<b>CDPH</b>	California Department of Public Health	<b>LASLI</b>	List of Approved Surplus Lines Insurers
<b>CDSS</b>	California Department of Social Services	<b>LWDA</b>	Labor and Workforce Development Agency
<b>CDT</b>	California Department of Technology	<b>OSHPD</b>	Office of Statewide Health Planning and Development
<b>CEC</b>	Cal Employee Connect	<b>PaaS</b>	Platform as a Service
<b>CHHSA</b>	California Health and Human Services Agency	<b>PAL</b>	Project Approval Lifecycle
<b>CISA</b>	Cybersecurity and Infrastructure Security Agency	<b>PII</b>	Personally Identifiable Information
<b>CNRA</b>	California Natural Resources Agency	<b>RFI<sup>2</sup></b>	Request for Innovative Ideas
<b>CSU</b>	California State University	<b>RBDMS</b>	Risk Based Data Management System
<b>DMV</b>	Department of Motor Vehicles	<b>SaaS</b>	Software as a Service
<b>DOF</b>	Department of Finance	<b>SOC</b>	Security Operations Center
		<b>SOMS</b>	Strategic Offender Management System
		<b>eWIC</b>	Electronic Women, Infants, and Children



California  
DEPARTMENT OF TECHNOLOGY

1325 J Street, Suite • 1600 Sacramento, CA 95814  
Phone: (916) 319-9223

