BRIDGE TO THE FUTURE:
STATEWIDE IT ANNUAL REPORT 2021

California
Department of Technology

INTRODUCTION

The response to COVID-19 continued to dominate much of the state's efforts throughout 2021. No one could have predicted much of the state and 83 percent of the Department's 950 employees would still be teleworking through most of the year, that the Delta variant of COVID-19 would emerge or that we would still be tallying the ongoing economic and human toll of the virus.

Just as the California Department of Technology and partner agencies pivoted to address data and contact tracing needs in 2020, Department leadership and staff never let up as we moved to ensure vaccines were distributed equitably and quickly, and then created digital access to the vaccine record to help the state on its move toward reopening.

The state's IT community sprang into action not just for pandemic support, but for numerous other efforts that leveraged technology to meet our society's goals and make progress on the big, complex problems affecting us all.

These included the Broadband for All Initiative and specific focus on the Middle-Mile Initiative to lay the foundation of a digital infrastructure for the state; drought response following another historically dry year; publication and implementation of Cal-Secure, California's roadmap to protect data privacy and security; and the award of $25 million for the Technology Modernization Fund — our legislators' recognition that state departments can move quickly to make continuous and timely improvement.

Since the pandemic, CDT's continued collaboration with other departments, public and private entities and educators proved critical to getting projects done quickly. What we do isn't just about delivering technology — it's about delivering fast and secure public services and making common technology easy to use for government workers and our residents. We are learning from each other throughout every iteration and owning our successes while we grow through our challenges.

This year's annual report tells the story of how the state's IT community worked together to bring about real change to effectively serve the people of California.

Amy Tong and Russ Nichols

Amy Tong*

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

Russ Nichols

Deputy State of California
Chief Information Officer,
Chief Deputy Director, California
Department of Technology

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* Amy Tong served as State CIO and Director of CDT through December 2021. She currently serves as the Director of the Office of Digital Innovation.
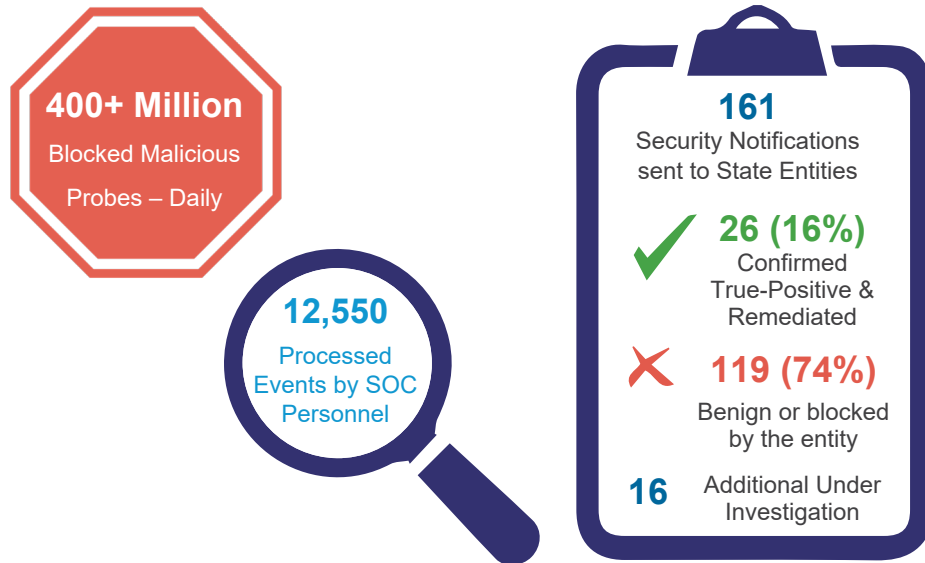
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STATEWIDE IT PERFORMANCE METRICS

The following metrics measure statewide trends in government IT activity and services.

SECURITY

### Malicious Activity Detected by the Security Operations Center

400+ Million Blocked Malicious Probes – Daily

12,550 Processed Events by SOC Personnel

161 Security Notifications sent to State Entities

✓ **26 (16%)** Confirmed True-Positive & Remediated

✗ **119 (74%)** Benign or blocked by the entity
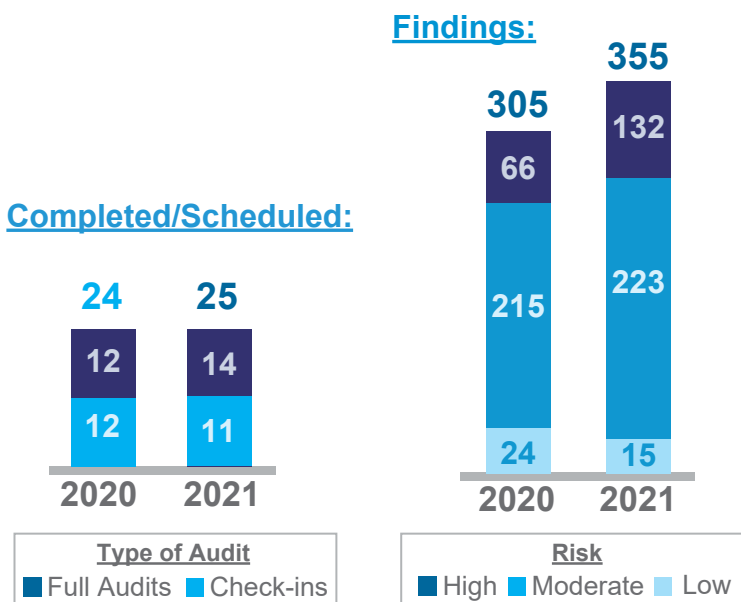
16 Additional Under Investigation

The number of malicious activities detected in 2021by 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

1 2020   **1** 2021
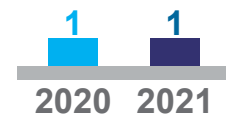
The number of breaches during the calendar year that involved Personally Identifiable Information (PII) contained in lost or stolen unencrypted electronic devices and storage media. This number does not include paper and verbal releases of information.

Information Security Audits (Policy Focused)

Completed/Scheduled:

	2020	2021
Full Audits	12	14
Check-ins	12	11
Total	**24**	**25**

Findings:

	2020	2021
High	66	132
Moderate	215	223
Low	24	15
Total	**305**	**355**

Type of Audit
■ Full Audits ■ Check-ins

Risk
■ High ■ Moderate ■ Low

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)

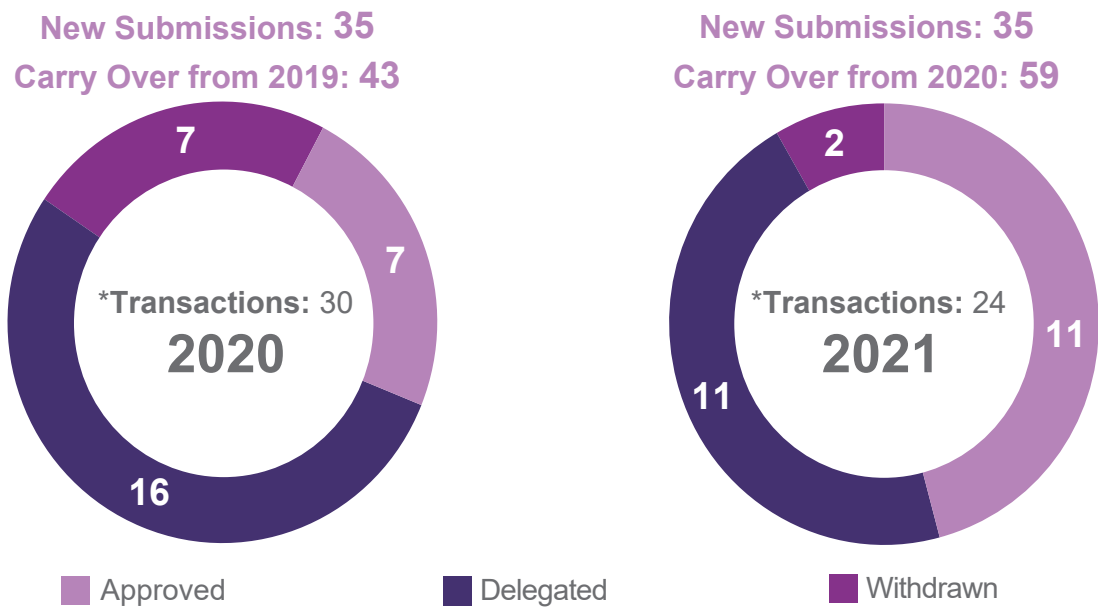**Completed/In-Progress**

68 2020   **61** 2021
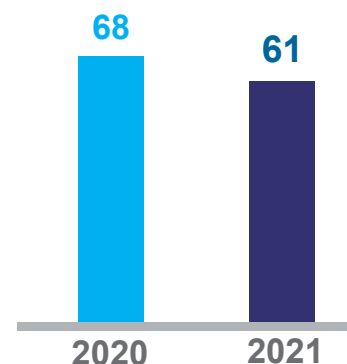
The number of Independent Security Assessments conducted by the California Military Department, or an approved third party, and a summary of their findings. Some focus areas include: asset management, continuous user training against Phishing attacks, and consistent patching for vulnerabilities.

***Note:** (1) The actual number of reports will be smaller (50) because of the host/hosted relationship which means one report can include one or more hosted entities.*
(2) The decline is mostly due to some Independents that declined to participate.

PROJECT DELIVERY

Number of Technology Initiatives in Project Approval Lifecycle

New Submissions: 35
Carry Over from 2019: 43

New Submissions: 35
Carry Over from 2020: 59

2020
*Transactions: 30

7
7
16
(donut chart segments)

2021
*Transactions: 24

2
11
11
11
(donut chart segments)

■ Approved   ■ Delegated   ■ Withdrawn

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. The COVID-19 pandemic created uncertainty for the state's economic outlook resulting in a decrease in project funding and number of BCPs.

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

Number of Projects with Major Variances

■ Special Project Reports (SPRs) associated with projects approved through the former Feasibility Study Report (FSR) process

■ SPRs associated with projects approved through the new Project Approval Lifecycle process

4
2
2
2020

13
9
4
2021

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%. SPRs increased over the previous year due to legislative/policy changes, project alignment reassessments and COVID-19 impacts.

Large Projects Completed Within Schedule and Budget

21
2
2020

15
1
2021

■ Large Projects Completed
■ In-flight

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

WORKFORCE

To meet the needs of an evolving workforce, CDT introduced:

Emerging IT Leadership

20 participants

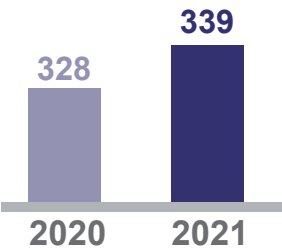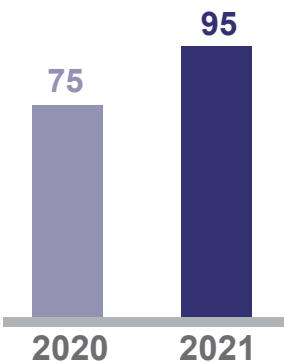**Cybersecurity Boot Camps**

20 participants

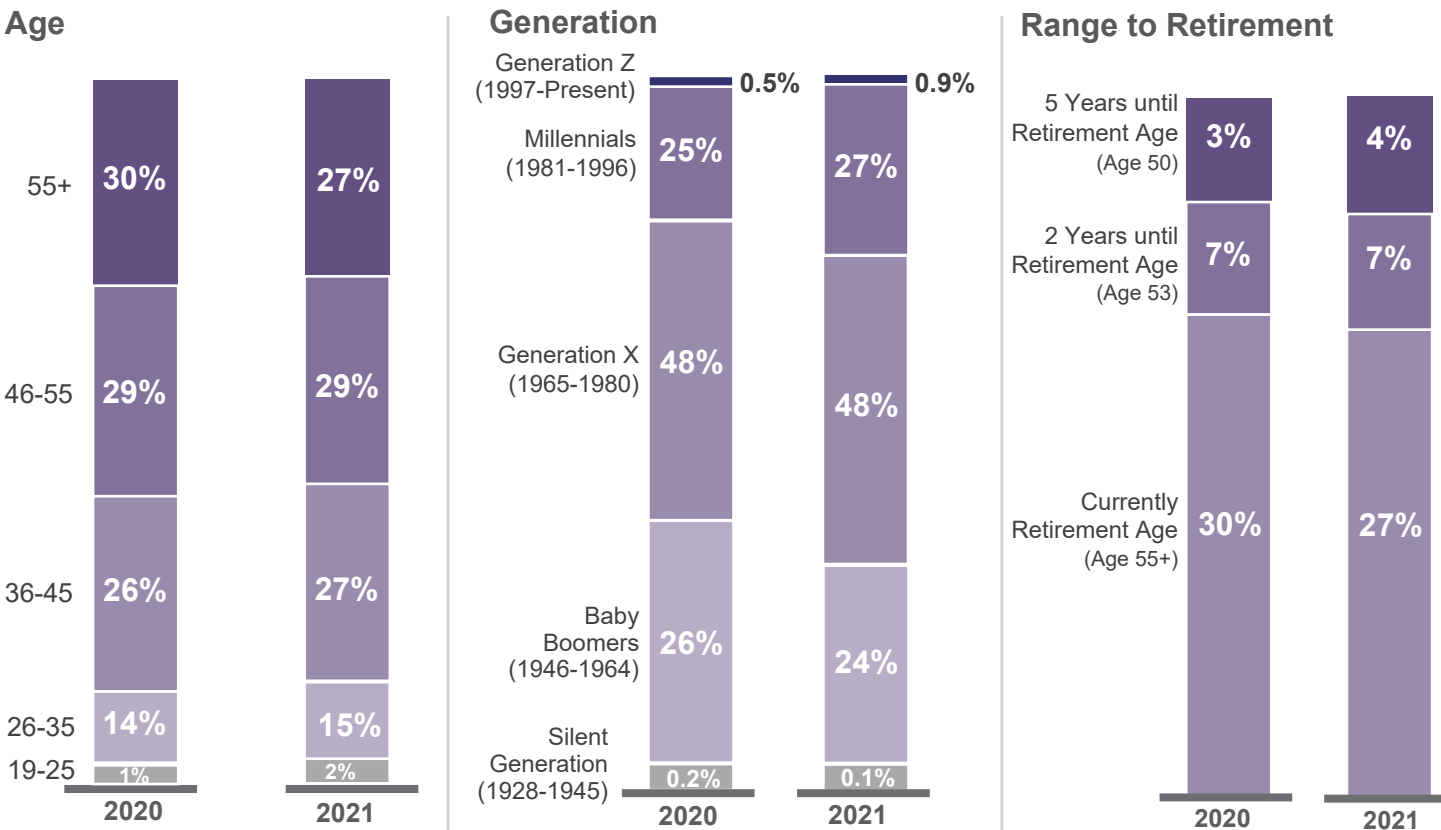**By offering remote training, CDT has expanded its audience to the entire state:**

Number of Individuals Completing IT Leadership Training

328
2020

339
2021

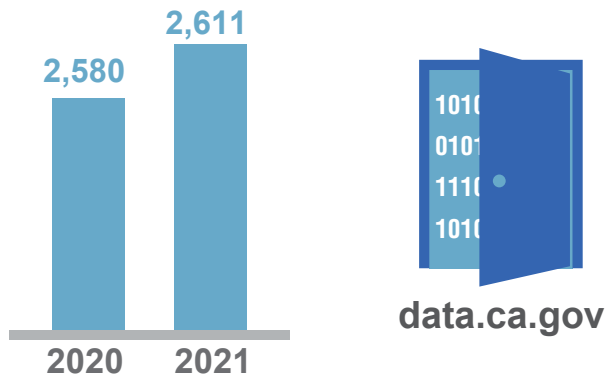**Number of individual departments/cities/counties/courts attending training**

75
2020

95
2021

STATEWIDE IT WORKFORCE DEMOGRAPHICS

State IT Employees

4.96%
of State Workforce

5%
of State Workforce

11,962	12,013
2020	2021

Gender

	2020	2021
Males	66%	66%
Females	34%	34%

Ethnicity

	2020	2021
White	40%	39%
Asian	30%	37%
Latino/Hispanic	11%	12%
African American	7%	7%
Other	13%	5%

Age

	2020	2021
55+	30%	27%
46-55	29%	29%
36-45	26%	27%
26-35	14%	15%
19-25	1%	2%

Source: CalHR

Generation

	2020	2021
Generation Z (1997-Present)	0.5%	0.9%
Millennials (1981-1996)	25%	27%
Generation X (1965-1980)	48%	48%
Baby Boomers (1946-1964)	26%	24%
Silent Generation (1928-1945)	0.2%	0.1%

Range to Retirement

	2020	2021
5 Years until Retirement Age (Age 50)	3%	4%
2 Years until Retirement Age (Age 53)	7%	7%
Currently Retirement Age (Age 55+)	30%	27%

TECHNOLOGY INNOVATION

Number of Datasets Available to the Public

2,580 — 2020
2,611 — 2021

data.ca.gov

Number of State Contributed Open Source Code Sets

199 — 2020
159 — 2021

code.ca.gov
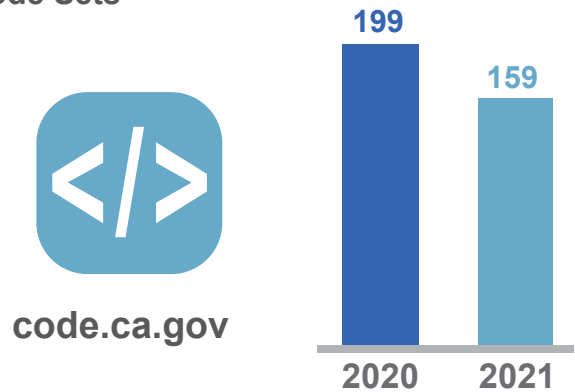
Number of GIS-based Datasets Available to the Public through the Statewide Geoportal

1,765 — 2020
2,069 — 2021
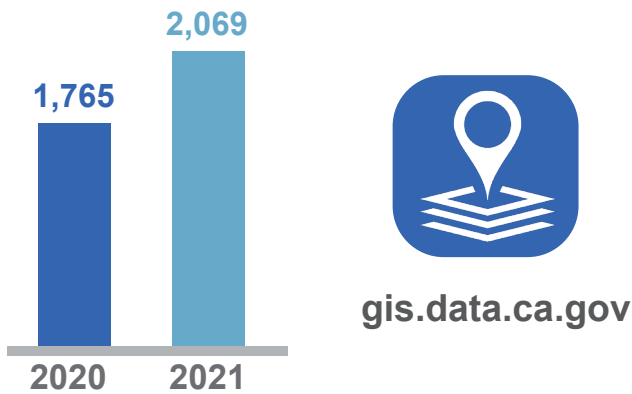
gis.data.ca.gov

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

gis.data.ca.gov

83 — 2020
115 — 2021

Data.ca.gov Page Views

JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT
139,216	136,001	145,533	139,733	171,994	106,749	118,376	144,047	115,697	88,633

Geoportal Page Views

JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT
34,967	39,395	49,146	49,304	42,280	20,586	18,079	20,979	24,389	20,133
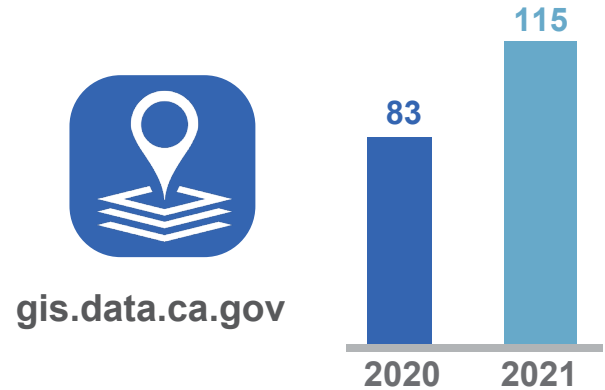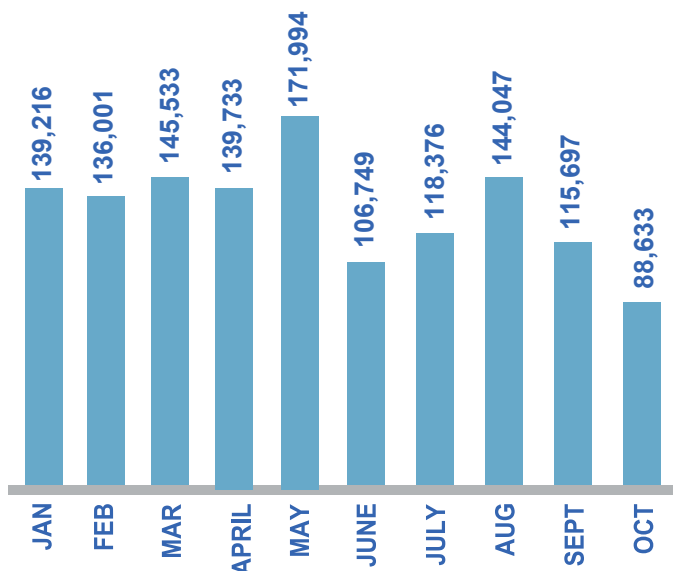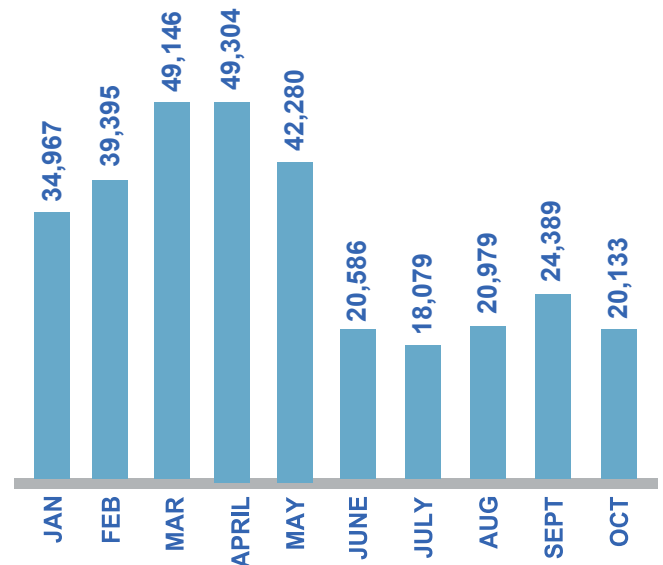
TECHNOLOGY INNOVATION

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

2020 3,426,964,650

2021 3,390,105,705
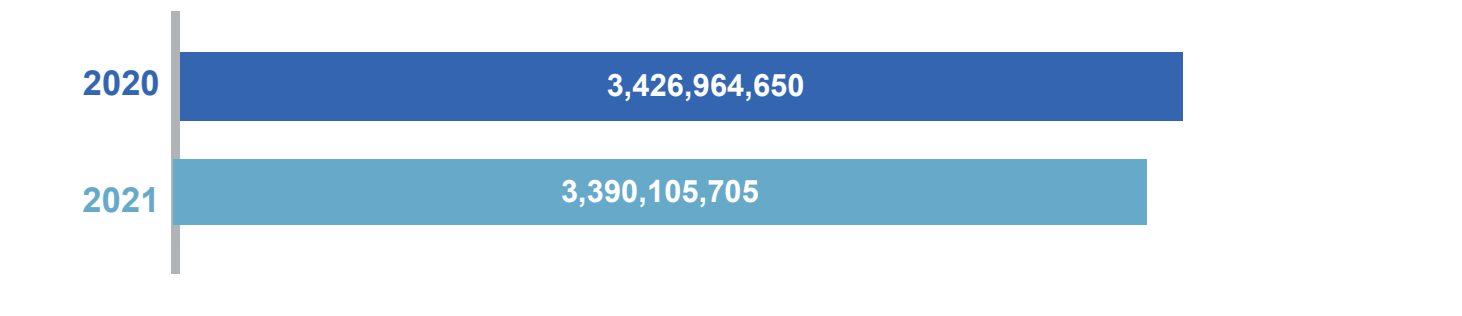
Number of Digital Services Accessible Through the CA State Portal

141
127

CA.gov

2020   2021
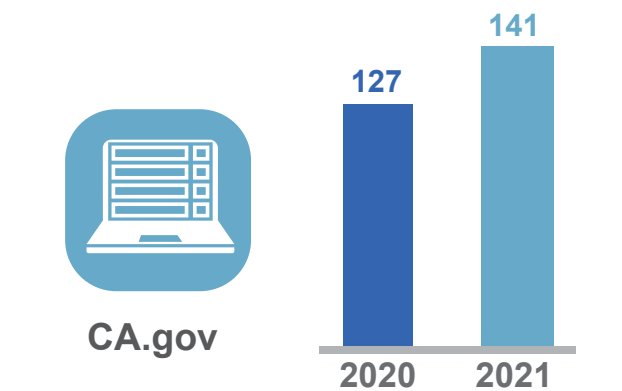
The number of digital services accessible through the California State Portal (www.ca.gov), a single navigation link for common public services.

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

.80% increase

253
2021

251
2020
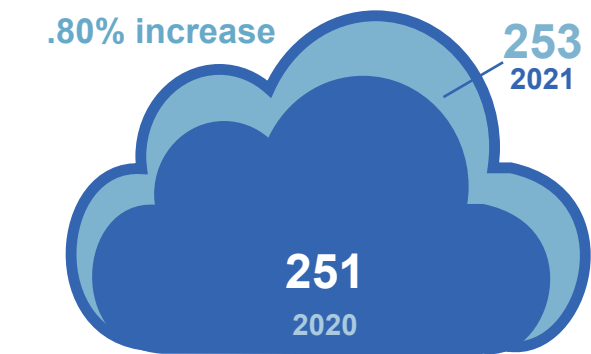
The cloud-based SaaS solutions used by state entities offered through the state data center as part of its Vendor Hosted Subscription Services (VHSS).

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

1,169% increase

1,738
2021

137
2020
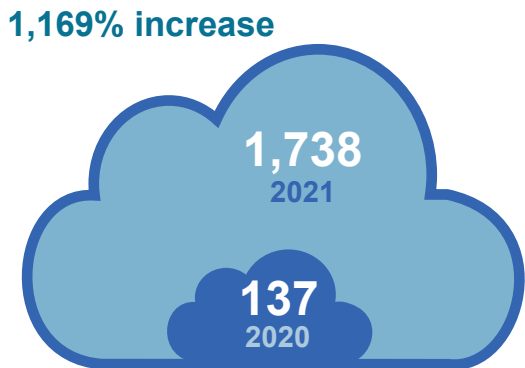
The number of subscriptions to cloud-based IaaS/PaaS solutions by state entities offered through the State Data Center.

Total Subscriptions for Services Utilized

53% increase

$40,638,479.60
2021

$26,567,697
2020
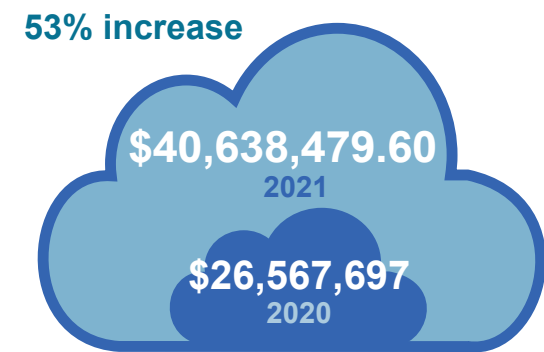
The total amount spent on subscriptions by state entities using cloud-based IaaS and PaaS solutions offered through the State Data Center.

TECHNOLOGY INNOVATION
TO OVERCOME CRISIS

During 2021, the pandemic continued to challenge California, the nation and the world. Our IT community helped position California as a leader in vaccine distribution and virus suppression and offer a course for Californians to navigate the new normal.

My Turn: California's front door to vaccine access

Before My Turn, California was ranked last in vaccine distribution in America. Sixty-one different vaccine distribution systems that served niche communities left a void of statewide data to inform the optimal distribution of vaccinations statewide.

California needed a system that would handle the entire vaccine management process – from inventory to inoculation to reporting – to equitably vaccinate as many Californians as possible before the state reopened on June 15.

The state of California collaborated with the counties of San Diego and Los Angeles to create the My Turn vaccine finder tool using Agile methodology. Successful implementation was measured by the ability to quickly reach at-risk and underserved populations, provide a holistic view of available appointments and reduce inventory backlog.

With My Turn in place, mass vaccination sites at sports stadiums, better data to track and distribute the state's vaccine supply, the pace of vaccine administration began to increase. California moved from being one of the slowest states to administer vaccine to one of the fastest. By September 2021, more than 80 percent of eligible residents had at least one dose of the COVID-19 vaccine and in the fall, the state began using My Turn administering doses to children as well as booster doses to adults.

The rapid development and deployment of My Turn was possible due to the contributions of many partners in the public and private sector including public health leadership from the state and local health jurisdictions; leaders of the Office of Emergency Services, Governor's Office and Government Operations Agency; hospitals, pharmacies, physicians and their leadership associations; Accenture, Blue Shield, and the millions of Californians who put their trust in the tool to help them find and schedule a Covid-19 vaccine appointment.

Today, My Turn continues to evolve with the pandemic. A proven vaccine management system, it can be repurposed to meet other vaccination needs.

Vaccine Uptake Tool: Reaching the Underserved

CalOES worked in collaboration with Esri, CDT, California Office of Digital Innovation (ODI), and Google to build its Vaccine Uptake Tool to reach underserved communities and increase vaccination rates throughout California. The tool was designed to expand vaccine coverage among the senior population (aged 65+), minority population, disabled population, households with limited English-speaking ability and Californians with incomes below the poverty line.

The tool works by combining all areas of coverage into a score that would allow the team to identify localized concentrations of underserved communities. The tool provides both public and internal views and uses group and communities to view data or submit feedback. This helps to gather and update vaccination rates based on ethnicity and hesitancy. The Vaccine Uptake Tool provides a robust way to share data and information to increase vaccination in California. It exemplifies the power of technology in building not just more efficient and effective government, but a compassionate and fair government.

DCVR: Easy Access to Vaccine Verification
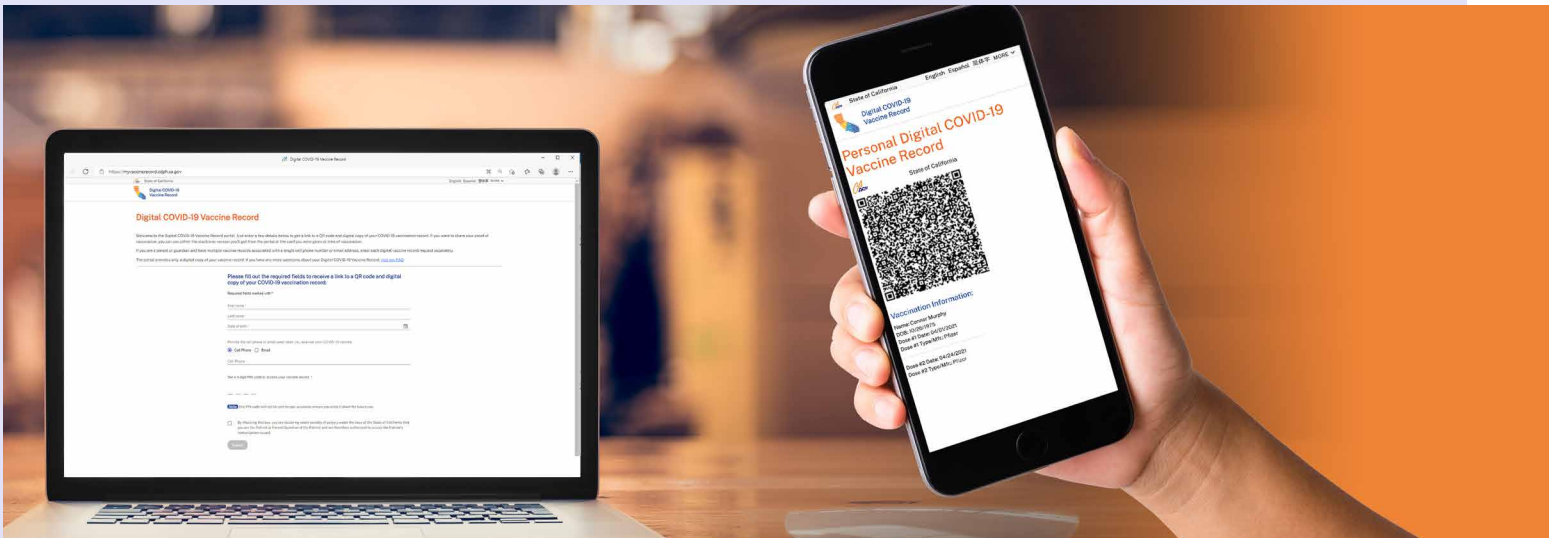
The Digital COVID-19 Vaccine Record portal launched in June 2021 to give every vaccinated Californian who wants one a digital version of their vaccine record that is also a SMART Health Card. The digital record can't go through the wash, be lost or thrown away, and updates with every additional booster or dose. With the DCVR, California residents have an opt-in, secure, and shareable digital copy of their COVID-19 vaccination records to use as they see fit.

Twelve days after its launch, the system delivered more than 1 million digital vaccine records to California residents through the site, and more have been downloaded every day. There has been great demand for this service in California, which joins other states and entities in supporting the SMART Health Cards framework, including New York, Louisiana, Walmart, UC Health and more.

In September 2021, CDT released the code for both the front end and the middle tier for California's Digital Vaccine Record to the public domain on GitHub. Any state interested in deploying a digital vaccine record system should be able to use this free code to connect their own immunization registry back end and launch a similar portal to California's.

The Digital COVID-19 Vaccine Record is not proof of identity, but a confirmation of a vaccination record belonging to the individual named who was born on the date specified. Whether a California resident wants a digital vaccine record or wants to share it with others, is entirely up to them.

Safe Schools Hub: Prioritizing Children's Health

In March 2021, Governor Newsom prioritized the safe reopening of schools to expand academic, mental health and social-emotional supports in the remaining school year and over the summer. In addition to closing learning gaps from remote learning, safe reopening of schools was tied to return to work for many primary caregivers who cannot leave children unattended at home.

CDT, in partnership with the California Department of Public Health (CDPH), California Collaborative for Educational Excellence (CCEE), Governor's Office and commercial partner Esri created the Safe Schools for All Hub, which consolidates key resources and information related to COVID-19 and schools.

Launched in February ahead of the Governor's $6.6 billion package and plan to reopen schools, the web application provided key resources and transparency to support the return to in-person instruction including school district maps that contain information on each district's safety plans, PPE/Supplies on hand, reopening status, funding levels and positive COVID-19 case numbers tied to a district's ability to receive reopening funding. The Hub also provided a channel for school administrators and Local Health Jurisdictions to request technical assistance for implementing their COVID-safety plans. It also gave school staff and parents the opportunity to give direct feedback to the state and voice any issues or concerns they had about safety.

Rent Relief Program Provides Emergency Economic Help

Senate Bill 91, approved in January 2021, established a new rental assistance program and appropriated $1.6 billion from the federal trust fund to provide financial help to eligible households for rent, utilities, and other expenses during the COVID-19 outbreak. This program, referred to as California COVID-19 Rent Relief Program, is administered by the Department of Housing and Community Development.

HCD successfully launched the COVID-19 Rent Relief Program portal to provide administration and disbursement services for the program. The public-facing platform uses a Software-as-a-Service solution supported by additional Commercial-Off-The-Shelf products in support of call center, case management, and fund disbursement functions. The project team utilized these solutions to rapidly

process rental assistance applications received through the portal.

During the first six months, HCD provided over $584 million of assistance to more than 49,000 households. Noticing the success of the HCD program, many local jurisdictions decided to transition into the state program in the next federal funding round.

Assembly Bill 832 resulted in significant acceleration of this Rent Relief Program. HCD received over 200,000 applications and more than $2.9 billion in obligated assistance. The department's rapid analysis and selection of technology solutions and a business partner enabled HCD to rapidly scale-up and serve public through this Nation-Leading Rent Relief Program.

Vision into Action

California's state government IT community has a vision of the future inspired by thousands of passionate, dedicated public servants.
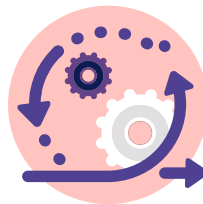
Vision 2023

Technology powering a compassionate, human-centered government.

Our Principles

Put people first

Deliver what Californians and the public servants working for them need.

Create continuous and timely improvements

Update and improve systems and services every day.

Working together beats working alone

Solve big challenges with multi-disciplinary teams from different departments.

Our Goals

Deliver clear, fast, secure and dependable public services
Make government services and information stable, easy to find and simple to navigate.

Ensure public services are equitable and inclusive
Improve interaction with the government by providing equitable access to all services and information, and expand diversity in the state workforce.

Make common technology easy to access, use, share and reuse across government
Encourage collaboration among multi-disciplinary teams by making it easier and faster to apply shared experience and patterns to solve problems.

Build digital government more quickly and effectively
Prioritize technology investments, and balance oversight and planning to increase project delivery. Modernize state legacy systems through an agile management and procurement approach, and document successes and failures so others may learn.

Build confident, empowered multi-disciplinary teams
Empower leaders to integrate technology into their programs and operations to improve outcomes by attracting new talent, developing diverse technology leadership, continuously upgrading training, and fostering multi-disciplinary teamwork.

Join a Challenge Team! *vision2023.cdt.ca.gov*

Pub. 2-9-21

We believe in technology powering compassionate, human-centered government and we can make this vision real by working together and using technology to listen to people, help people, and improve what we do.

In 2021, we moved Vision 2023 into action and brought our principles to life through IT projects. Following are notable examples of California state government IT initiatives aligned with the principles and goals of Vision 2023.

Our Goals

Deliver clear, fast, secure and dependable public services

Ensure public services are equitable and inclusive

Make common technology easy to access, use, share and reuse across government

Build digital government more quickly and more effectively

Build confident, empowered multi-disciplinary teams

Putting People First

Delivering what Californians and the public servants working for them need.

Incarcerated Persons See Visiting Improvements

Friends and family visits to incarcerated persons are an important way to maintain connections and community ties. Following a prolonged suspension of in-person visitation due to COVID-19, the California Department of Corrections and Rehabilitation implemented "virtual" visits by deploying 1,330 laptop and desktop computers within visiting areas at all prisons and 27 fire camps. The Visiting Scheduling Application (VSA) allowed approved visitors throughout the state to use a smart phone, tablet, or computer to easily schedule a visit and receive timely notifications to changes in reservations. Friends and family were able to maintain ties with incarcerated people without traveling to the institution and risking either exposure to COVID-19 or unknowingly bringing COVID-19 into CDCR facilities.

As CDCR has reopened in-person visiting, VSA has allowed incarcerated persons to perform COVID testing prior to seeing family and staff to identify the number of visitor rapid tests needed on the day of visitation. The app helped tailor visiting schedules to better meet the needs of friends and family leading to better connection and communication – a key piece in the rehabilitative process for incarcerated persons.

Parks Record Management System Enhances Public Safety
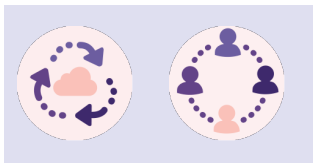
The Federal Bureau of Investigation issued a mandate for the law enforcement agencies to implement National Incident-Based Reporting System (NIBRS) data collection by January 2021 and submit reports to the Department of Justice. In response to federal report requirements, the Department of Parks and Recreation's Law Enforcement and Emergency Services Division launched the statewide Parks Record Management System IT project.

The PRMS provides for a law enforcement agency to securely store and track incident information and public safety data for statistical report generation and public records request fulfillment. The PRMS supports California and federal DOJ requirements for reporting NIBRS.

PRMS benefits include improved peace officer and public safety, records team efficiency, and modernization of incident collection and reporting services improving law enforcement processes, as well as generating and submitting the NIBRS report to DOJ online. The implementation of PRMS created additional improvements through operational automation, standardization, and digital transformation.

# American Disabilities Act Compliance Tracking

The Americans with Disabilities Act is a federal law that guarantees equal opportunity and provides basic civil rights protections for individuals with disabilities in public and private sector services and employment. CDCR is responsible for ensuring that incarcerated persons and parolees with disabilities are afforded the same rights, privileges and access to programs, services and activities as non-disabled inmates and parolees.

In response to a court order and an effort to create positive relationships with both the ADA population and staff, CDCR took steps to establish new positions and deploy an ADA Compliance Tracking application. The application was developed to be accessible via a mobile device, allowing staff to move about the institution and document findings through interviews with inmates and staff. With the ADA Compliance Tracking application, CDCR staff can monitor and ensure appropriate housing of inmates, inspect facility condition and equipment, and evaluate equal access to programs, services, and activities.

The application also provides the ability to track status and resolution of outstanding matters and respond accurately to issues important to the court. This close monitoring of the department's ADA compliance ensures inmates and parolees are offered the same rights, privileges, and access to programs, services, and activities, regardless of their disability.

Mobile App Makes Returning to the Office Easier
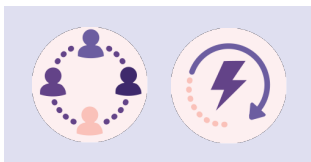
As Covered California began to welcome a limited number of staff back to the office, staff were required to identify the office location they planned to visit and confirm the absence of COVID-19 symptoms or recent contact with an infected person. Covered California IT developed an intuitive mobile application to maintain this data, refer employees to CDC-approved COVID-19 information, and alert resource managers and the facilities team about staff office visits to manage health and safety protocols.

Less than a week after the governor's executive order for state employees to provide vaccine verification before returning to the office, Covered California's IT team created, tested and deployed a secure, mobile COVID-19 vaccine verification application. It also updated the initial COVID-19 tracker and vaccine verification applications to screen office workers for symptoms or recent contact with a COVID-19 positive individual and confirm either a vaccination or recent negative test result before each office visit. This information is routed to resource managers and facilities personnel to manage the health and safety of its workforce. The team leveraged an Agile development process to meet speed to market, usability, and information security requirements.

The benefits include improved reporting, contact tracing, compliance with the governor's executive order, and automated processes to know if staff need to be tested for COVID-19.

Responsible Beverage Service Training Program

Passage of Assembly Bill 1221 created the Responsible Beverage Service Training Act. The bill required the Alcoholic Beverage Control to create the Responsible Beverage Service Training Program (RBSTP) to ensure servers and their managers of alcoholic beverages are educated on the dangers of serving alcohol to minors and over-serving alcohol to patrons with the intention of reducing alcohol-related harm to local communities. The mandate created a new training requirement for an estimated 1 million on-premises alcohol servers, their managers, and licensees.

In 2021, ABC released the Responsible Beverage Service Portal. Collaborating with its solution vendor, ABC leveraged Agile methodology and open-source software to develop the RBSTP. As part of this project a Continuous Integration/Continuous Deployment (CI/CD) pipeline was created that is used for deploying software and ensuring code quality.
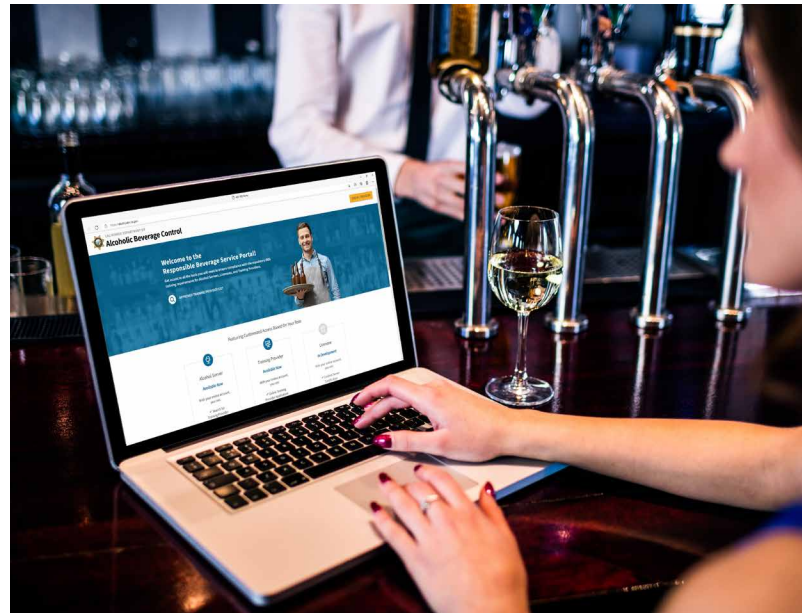
The open-source technology stack and the CI/CD pipeline will provide ABC the tools necessary to deliver quality digital services for ABC stakeholders quickly and efficiently.

DMV Chrome Summary: An Augmented Digital Experience

The Department of Motor Vehicles Chrome Summary project was successfully deployed in 173 DMV field offices. This vital project improved DMV workflow while reducing the department's carbon footprint and providing customers with an electronic review of its completed Driver License or Identification Card applications.

Chrome enables DMV technicians to provide better and faster customer service in field offices, resulting in a 30-second reduction per transaction processing time due to the implementation. The new process is not only efficient, but it also modernizes and digitizes the DL/ID application submission process end-to-end through 2,704 Chrome tablets deployed across DMV field offices. DMV IT staff working with its business divisions developed a custom solution deployed on strategically mounted tablets at all DMV offices statewide.

Prior to implementation, the only way for customers to attest to and affirm the information provided on their application was by providing a wet signature on a printed summary page. These efforts that allow customers to confirm information using a touch-screen terminal have reduced major waste by saving 3,000 lbs. of paper per day. Eliminating printing, storing, and paper scanning the project saves 2,900 hours of staff time per month and eliminates expenses for couriers, shredding and disposal. DMV Chrome tablets allow a digital alternative while laying the foundation for future digital transformation initiatives.

Broadband for All

The COVID-19 pandemic amplified the importance of internet connectivity to receive healthcare, go to work and attend school. Yet some Californians do not have fast enough internet service to manage daily life, and some have no connection at all. In response to the COVID-19 pandemic, the governor issued an executive order for all executive branch agencies to make broadband a priority and directed the California Broadband Council to develop the Broadband for All Action Plan, which was completed in December 2020.

Since then, the Council has been working to implement specific action items in the executive order and action plan related to data and mapping, funding, broadband adoption and deployment and digital literacy. Items were determined to be short-term (accomplished within two years) and long-term (accomplished in longer than two years). Year 2022 will focus on completion of short-terms action items and making significant progress on long-term action items and coordinating efforts to support and augment broadband.

Governor Gavin Newsom signed legislation in July 2021 to invest $6 billion for state broadband infrastructure for middle-mile and last-mile projects. Three guiding principles define the goals of the Middle-Mile Broadband Initiative:

1. Provide affordable, open-access, middle-mile broadband infrastructure to enable last-mile network connectivity throughout the state.

2. Build the network expeditiously, leveraging existing infrastructure, networks, and construction projects where feasible.

3. Prioritize connectivity to unserved and underserved communities, including community institutions.

The historic legislation, announced in partnership with legislative leaders, advances the statewide broadband plan with expanded infrastructure prioritizing unserved and underserved areas. In November 2021, the Governor's office announced the initial 18 projects to launch the middle-mile broadband initiative.

All-Hazards Dashboard

The California Health and Human Services departments provide millions of Californians with benefits to support life and health, including during emergency circumstances such as wildfires, earthquakes, and Public Safety Power Shutoffs.

During these emergencies, CHHS coordinated across multiple departments through manual data collection processes which were slow, cumbersome, expensive, and made it nearly impossible for decision-makers to see the true level of impact to communities, sometimes providing resources to incorrect locations.

To resolve these issues, CHHS developed the All-Hazards Dashboard (AHD). The AHD combines CHHS data into a single, integrated system that aligns key data elements across CHHS departments into one location. The dashboard also uses a Geographical Information System application to visualize and provide a unified picture of hazards. And for the CHHS Agency Data platform to automate data processes, reduce discrepancies caused by manual processes, retain historical data for analysis, and produce higher quality data, faster.

The AHD enhances CHHS operational capabilities to protect Californians and maintain critical services under emergency conditions, while also producing time and cost savings. Online Registration Conversion

California law requires businesses in certain industries with a history of underpaying low-wage earners to obtain a registration or license from the Labor Commissioner's Office within the Department of Industrial Relations (DIR) before doing business in the state. Unfortunately, the systems required for registration and licensing were old, code-based, and siloed. Any change in legislation or enhancement request required a great deal of IT resources and effort.

That changed when DIR built a single platform that allows for configuration, with minimal code, to add and maintain each registration type. The platform's flexible functionality can be readily added to one or more registration types instead of having to code each separately.

The new system will process 50,000 applications annually, has decreased paper applications by 30%, provides improved, online customer service, permits the public to search registrations and supports multiple registration types.

Innovative Use of Data Analytics to Help Fight Wildfires

In 2020 over 9,000 wildfires scorched more than 4 million acres of California. In 2021, the state continued to experience unprecedented wildfires and had six of the seven largest wildfires in California history since 2020. CAL FIRE was determined to leverage emerging predictive-centric technology to provide near-real-time situation awareness, on-demand fire spread prediction, and risk forecasting to assist the critical wildfire-fighting decision-making in saving lives.

Prior to finding a solution, few staff members could use complex programs to predict fire behavior This limited usage legacy fire prediction modeling resulted in inaccurate estimations, extended resource requirements, and loss of critical time due to delayed response. To meet the challenge, CAL FIRE implemented Wildfire Analyst Enterprise (WFA-E)

solution that provides a near-instant response to an incident with very accurate fire spread modeling. A user can access WFA-E easily and quickly, providing complex and customizable parameters for use. The solution connects CAL FIRE with other previously unavailable data sources and greatly increases accuracy. WFA-E can ingest additional data and integrate it into other business analytic solutions by using artificial intelligence generated from multi-dimensional big data analytics, large numbers of IoT sensors, hundreds of cameras, extensive computer vision analysis on images from satellite, drones, and aircraft surveillance.

Through predictive intelligence, CAL FIRE enhanced situational awareness information quickly and accurately for first responders and decision-makers, enabling the most efficient dispatch emergency responding resources and saving property and lives.

Our Goals

Deliver clear, fast, secure and dependable public services

Ensure public services are equitable and inclusive

Make common technology easy to access, use, share and reuse across government

Build digital government more quickly and more effectively

Build confident, empowered multi-disciplinary teams

Continuous, Timely Improvement

Updating and improving systems and services every day.

Technology Modernization Fund

The pandemic served as a catalyst for California's technology innovation and its continuing transformation into a truly digital government. Monumental efforts to keep critical public services online were met with quick development and implementation of new data systems to keep Californians safe.

Continuing this innovation, CDT began providing grants totaling $25 million in IT investments to modernize government services through a new Technology Modernization Fund (TMF). The one-time grant program provides quick funding to state departments needing to upgrade crucial and aging IT systems. This fund will help drive departments forward and improve and secure government services.

To apply for a TMF grant, departments must show proof-of-concept and how their solutions can optimize government services within a year of implementation. Funds will be allocated throughout 2022. The application process is competitive and multi-staged. CDT will grant multiple rounds of investments from the TMF until the grant fund is depleted.

## California Military Department Establishes a State Network
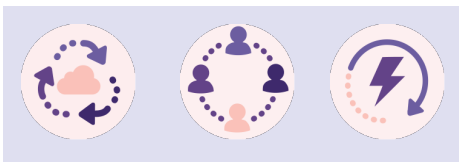
The California Military Department (CMD) historically operated on a federal network with some state interaction with the California Department of Technology, Cal-HR, and Department of General Services to support certain state-centric functions and comply with state policies and regulations. The Department of Defense introduced and implemented a nationwide modernization and convergence of the federal network to improve the resiliency and security of all DoD networks. Consequently, state-specific programs, applications, systems, and websites were significantly constrained, disrupted, or restricted altogether.

Since its inception, the CMD State Network team has completed an Independent Security Assessment and Information Security Policy Audit, developed a strategic plan, published 40 core policies and associated processes and procedures, established the core network infrastructure from Los Alamitos to Sacramento, developed and implemented a Microsoft 365 environment, reduced IT onboarding actions from more than 30 days to 24 hours, established uninterrupted access to FI$CAL and State Controller's Office and aligned the CMD with Vision 2023 goals.

CA Horse Racing Board
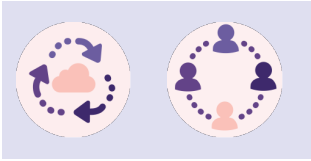
The California Horse Racing Board modernized the California Horse Racing Information System (CHRIS) to align it with FI$Cal, an IT system that modernized how the state of California manages its finances. CHRB purchased and installed the core package and support server applications it developed for licensing, enforcement/case management, stewards and board ruling management, the CHRB rulebook, and horse race overview management. Known as "CHRIS 2" the new system is supported by an extensive array of interfaces, so CHRB IT staff could easily integrate with horse racing industry organizations and groups around the world.

CHRB moved its production support system into the cloud resulting in about a 70% savings in server support costs. Cloud server costs are approximately a third of that of the mainframe, where the original CHRIS was developed and put into service 37 years ago.

Web-Based Wildlife Image Species Identification
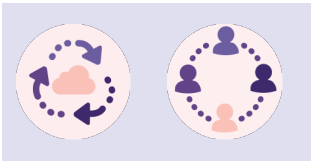
California Department of Fish and Wildlife deploys thousands of cameras at strategic locations throughout the state to estimate wildlife distributions and population demographics. These cameras produce hundreds of millions of images for staff to process. The arduous process demands staff to look at each photo and manually identify photographed wildlife to the species-level.

To solve this problem, CDFW established a new, web-based platform to support image storage, organization, sharing, and artificial intelligence (AI) processing for species identification. Using the new solution more than 2,325,000 images of over 150 species, collected from 10 CDFW initiatives across all California ecoregions have already been processed. With the assistance of AI, CDFW processes near-instant species identification. This has greatly reduced time and staff cost and resulted in faster output of critical data/information.

Previously if CDFW needed to know the locations of a specific species detection over the last three years, it would require weeks to synthesizing data. With the new capture and AI identification solution this information is produced in minutes and can be translated into standardized outputs, allowing CDFW to better monitor the status of wildlife species and communities across California, along with the threats impacting them.

California Lottery Plots a New Course
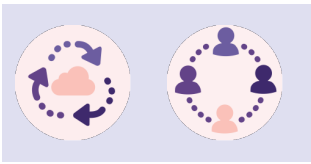
The California Lottery's existing gaming system was largely monolithic, making it difficult to modify individual capabilities without larger impacts. The Lottery recognized the need for a newer, scalable system and upgraded its current gaming system to improve the efficiency of ongoing operations and put the California Lottery at the forefront of gaming creativity and innovation.

Led by a partnership between the Enterprise Project Management Office and IT Service Delivery, the project team included more than 60 people across 22 Lottery business units. Working with subject matter experts from Prize Payments, Revenue Collections, Financial Reporting, Sales, SLED, the Scratchers® Inventory Management Center, and the Scratchers® distribution centers, the project elicited, validated, implemented, and deployed more than 13,000 business requirements across 11 distinct back-office applications.

System components interact and communicate with each other using standardized application programming interfaces. This means future refreshes can be managed on a more modular level as opposed having to replace the entire system at once—reducing risk and complexity in the development process.

In addition to technical and architectural improvements, the project also presented a chance to evaluate the system for opportunities to enhance business capabilities and overall user experience. Applying user-centric design principles for a more efficient and well-organized user experience, the project delivered enhancements to back-office business applications for management of 22,000 retailers accounting for 7.6 million daily transactions and improved draw management, product management, prize payments, inventory management, and information security.

Following a very successful go-live, the project team developed multiple communication vehicles including ITSD alerts, user bulletins and special about the changes to support procedures.

Covered CA Upgrades Its Business Process Manager
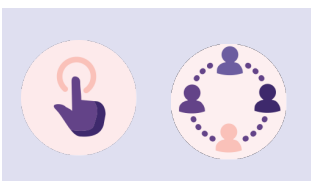
Prior to leveraging upgrades manager (BPM), Covered California staff manually loaded and assigned work to 1,500-plus individuals on a full-time basis to process applications for health insurance, verify documentation, respond to general correspondence, and other consumer-engagement oriented work.

The newly automated process leverages the existing platform to reduce implementation cost and now auto-assigns work to staff based on available skillsets and capacity. This allows for work to be assigned to staff and worked based on overall enterprise priority.

As a result, two full-time employees that were responsible for this workflow have been assigned to manage staff. Additional benefits include reduced time to work, reduced time to assign, better customer experience and faster delivery of service.

State Library Grant Portal Does Away with Guess Work

In California, government grants make up almost half of contributed income to nonprofits. Notable disparities exist in the geographic distribution of the revenue and assets that nonprofits receive, especially in rural and underserved communities. Some nonprofits and other interested parties lack the time and expertise to identify potential grant opportunities and may miss out of vital funding resources. Without a single unified access point to search for grants available from the state, individuals, nonprofit organizations, and other stakeholders had to navigate through the individual websites of every state department, bureau or commission for grant opportunities that may support their work. When queried, over 10,000 nonprofit organizations expressed support for a web-based portal that consolidated grant availability information.

The California Grants Portal (grants.ca.gov) was born out of the Grant Information Act of 2018. It demonstrates how a flexible, user-centered, 21st-century government can serve its residents in a helpful and intuitive way. Individuals and organizations searching for grants no longer need to hunt through the websites of myriad state agencies to identify vital funding resources.

The portal is unique because it is a platform for California state government entities—60 of which make grants and loans—to submit their grant opportunity information in a standard and uniform way. For the first time, this allows grant seekers to find, view and compare hundreds of grant opportunities, better positioning them to apply for those best suited to their industries. Grant seekers receive daily or weekly notifications on newest grant opportunities added by the state agencies.

As of October 2021, the portal's Site Statistics Dashboard listed a total of 449 grants to 55 state departments and agencies totaling $33.4 billion.

Managed Health Care Makes Large Group Rate Filing Easier

When health care service plans propose rate increases, they must file information with the Department of Managed Health Care (DMHC) at least 120 days before implementing the rates. DMHC required custom software modifications, which would have required six to eight months of project work and multiple IT resources. Such resources weren't available and contracting the work would have cost approximately $425,000.

To meet this challenge, DMHC developed a new application within Necessary Infrastructure Modernization for Business Unified Services (NIMBUS) platform, a software-as-a-Service application development framework and content services platform that enables software engineers to configure complex solutions and workflow automations without the need to allocate a team to write custom code.

As a result, DMHC was able to configure a solution with two part-time resources in just over 90 days. The department is now able to accept Large Group Rate review requests within the 60-day period. The new application eliminates the need for manual, paper and email-based processes and provides content services capabilities to manage document submission and retention of documents.

CHP unveils the next generation patrol vehicle—EV20

When the California Highway Patrol sought to replace the outdated radios and in-car computer systems infrastructure in its fleet of 2,600 patrol vehicles, it relied on an innovative approach. The update was necessary as the fleet was approaching end of life and often lacked replacement parts and technical support. After extensive research, CHP staff developed a comprehensive plan to replace the patrol vehicle environment infrastructure.

Harnessing its extensive patrol vehicle radio technology experience in conjunction with the Department of General Services' Leverage Procurement Agreement, CHP staff designed and developed a new radio system for patrol vehicle builds as the fleet worked through its replacement cycle. To illustrate the innovative approach, staff designed the system in components resulting in individual system parts that work independent to increase efficiency with repairs and equipment refresh.

The process of designing, procuring, and installing a radio system in-house was not only innovative and prudent, but provided the department the capability of staying agile along with future technology advances. More importantly, it proved that focused and innovative teams within CHP could work collaboratively, and reach achievements not previously thought possible.

Department of Insurance Enhances Suspected Fraudulent Claim Portal

Insurance fraud is frequent and far-reaching, costing Californians nearly $15 billion per year. The California Department of Insurance is the largest consumer protection agency in the state, receiving and processing tens of thousands of referrals regarding suspected fraud every year as part of a national system of state-based insurance regulation.

The National Insurance Crime Bureau (NICB) allowed insurance companies filing claims with the NICB to have a partial claim automatically sent to CDI's Electronic Suspected Fraudulent Claim (eFD-1) system. Despite this automatic forwarding, the insurance company then had to log into the eFD-1 System to complete the submission of the claim. Of the 23,470 claims received electronically last year, nearly half were initiated on the NICB system and required the insurance companies to log on and complete them through the eFD-1 system.

To resolve this issue, CDI's Fraud Division and Information Technology Division worked in tandem with the NICB to develop an enhanced interface that populates claims with all data necessary to be processed as complete. Insurance companies no longer need to log into the eFD-1 system to complete them, streamlining the process for thousands of claims. These referrals can now be efficiently processed and investigated by CDI, improving consumer protection and ensuring a fair marketplace for Californians.

High-speed Rail Web Management System Keeps People Informed

With a project the scale of bringing high-speed rail to California, timely and relevant information must be made available to the public. The California High-Speed Rail Authority uses a variety of communication and outreach channels to improve community transparency and engagement. The Authority's website is a critical source of contact for a wide range of information on the project including traffic and road closure-related alerts, financial reporting, construction updates, press releases, community and small business outreach, employment opportunities, board meeting information and materials, and environmental reports.

Members of the Authority's Strategic Communications, Multimedia, and Information Technology teams worked together to implement a new web content management system and related processes that simplified and automated workflows and facilitates the required remediation of content for accessibility.

The system provides a central repository for all web content organized by site taxonomy and meta-data,

improving content organization, architecture, search engine optimization, and site search functionality.

The web content management system helps the Authority get project-related information to the public faster and in a more organized and cost-effective manner.
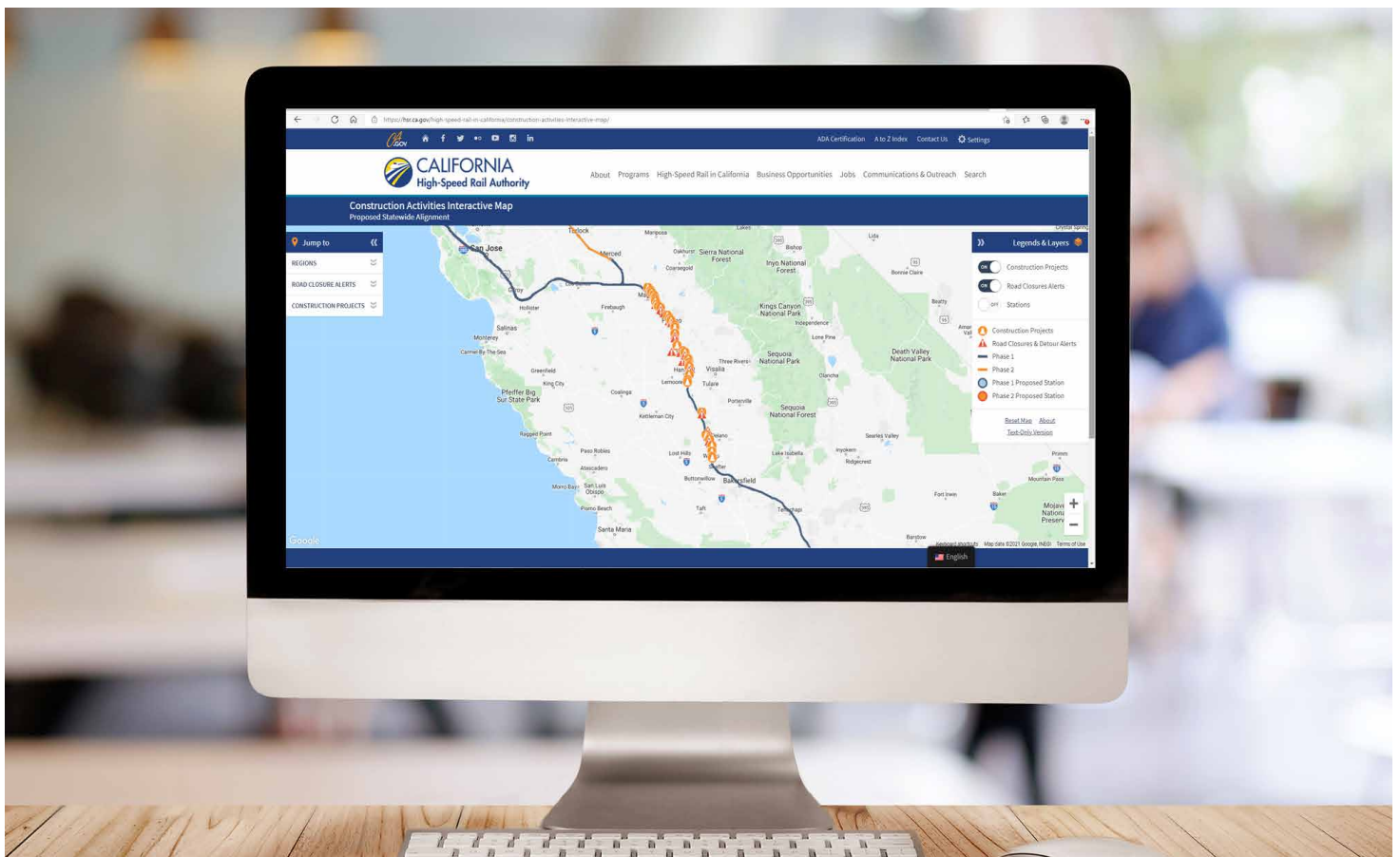
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Build digital government more quickly and more effectively

Build confident, empowered multi-disciplinary teams

Working Together Beats Working Alone

Solving big challenges with multi-disciplinary teams from different departments.

Improving Equity in Health and Human Services: Inclusive by Design

Our society and our health systems have long had gaps in equity between different groups, but the COVID-19 pandemic brought the disparities to the forefront with wide variances in health outcomes based on where people live as well as their socioeconomic status and race.

As a result, California Health and Human Services Agency Secretary Dr. Mark Ghaly, California Surgeon General Dr. Nadine Burke Harris, the CHHS Office of the Agency Information Officer, and the Center for Data Insights and Innovation, partnered to establish the Inclusive by Design initiative. Inclusive by Design connects CHHSA departments and explores opportunities to combat systemic racism and health inequity within CHHSA and the programs we fund.

The Inclusive by Design team developed several key recommendations for leadership, including a public-facing dashboard measuring progress toward racial and health equity and improving the integration of existing data on race and ethnicity to better inform policy. These and other measures bring CHHS one step closer to supporting racial and health equity.

California's Statewide Evacuation GIS Data Layer

California has seen more than its share of wildfires. While increasingly common, many fires deliver destruction and heartache for state residents. If it were not for our first responders who save lives and property, the state would face even greater devastation.

During one of California's recent fire seasons, it became clear that only a few California counties have evacuation zones defined in easily distributed digital maps. Many counties created evacuation zones on the fly as fires raged, while others relied solely on social media to send evacuation warnings to citizens.

Because this approach left state and local officials without a reliable source of evacuation information, it became important to find a way to combine scattered data sources into a single, statewide evacuation resource.

In response, CDT in partnership with the California Office of Emergency Services created a cloud-based, automated process capable of pulling in California county evacuation data and consolidating it into a single evacuation data layer that includes advisory, shelter-in-place, warning, evacuation, and repopulation information. The team contacted large counties to add data to the system and partnered with smaller counties that don't maintain their own data to add complete coverage for every county in the state.

The layer is available online to everyone. As of October 2021, the tool had received 11 million views/uses by public, state, and federal agencies that include the California Environmental Protection Agency, Natural Resources Agency, CHP, US Postal Service, Bureau of Land Management, and Housing and Urban Development.

Version 2.0 is in progress and will provide features such as road closures, shelter locations, rally points and escape routes.

Cybersecurity Roadmap to Protect Californians' Privacy and Security
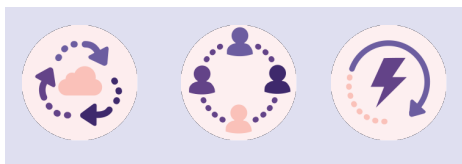
Increasingly sophisticated cyberattacks threaten all sectors of state, nation and world security and privacy. Recognizing the severity of the risk, the state of California released its first-ever, five-year cybersecurity roadmap, Cal-Secure. Built on industry-leading best practices and frameworks, Cal-Secure addresses critical gaps in the state's information and cybersecurity programs while enabling the state to manage existing and future threats more effectively.

Cal-Secure defines a path for state entities to strengthen cybersecurity measures and prioritize resources to manage the most significant cyber risks and safeguard those services for Californians who depend on them. The plan's priorities include developing and unifying California's diverse, innovative cybersecurity workforce to safeguard the data and systems used to deliver public services; providing effective oversight supported by a flexible governance model; and investing in technology and services to enhance cybersecurity capabilities at all state entities. Cal-Secure builds on the key objectives of the California Homeland Security Strategy, under which California established a goal to strengthen security and preparedness across cyberspace by enhancing safety and preparedness with state, federal, local, tribal, and private sector stakeholders.

Cal-Secure was created through a collaborative process with the California Cybersecurity Integration Center and its four critical partners: California Department of Technology, California Governor's Office of Emergency Services, California Highway Patrol, and California Military Department, as well as the state government security community.

The Cal OES Damage Assessment Pilot

The California Office of Emergency Services worked in collaboration with Google, Western Fire Chiefs Association and CalEPA to build and streamline the damage assessment process. Pilot project data was collected and extracted from different sources and imagery uploaded to the cloud for assessment.

The project will deliver a prototype and street-view imagery model with an accuracy of more than 90% for damaged and non-damaged classification. This level of accuracy has been achieved for both overhead and street-view modeling. Imageries were collected for River, Dixie and CALDOR fires and the project team will continue to train the model with this data.

The end goal has been to obtain FEMA's approval on the process, model, and accuracy. FEMA's approval on the platform and operations is critical for Preliminary Damage Assessment for Individual Assistance. The project is easy to use, accessible and reliable and delivers fast, dependable, and secure public services.

EDD's ID.me: Identity Verification

The impact from COVID-19 resulted in an exponential increase in Unemployment Insurance (UI) claims. With the significant increase, Employment Development Department quickly recognized that there were issues with the existing identity verification process for UI claims. The existing process was labor intensive requiring staff intervention and or claimants mailing proof through the US Postal Service that led to further delays in application processing. In addition, the increase in UI claims spurred an increase in fraudulent claims.

The EDD determined that the third-party identity verification tool in use by the California DMV, Social Security Administration, and the Unemployment Insurance programs administered in Arizona, Florida, Georgia, and Indiana, would meet the needs most effectively. Utilizing an Agile methodology, the project team implemented the solution within one month of contract execution and worked with external entities such as the CDT, Office of Digital Innovation, and the US Department of Labor to implement ID.me.

The new solution improved the user experience by reducing the burden for valid claimants, improved the overall support for users, and provided a higher confidence in the identity of claimants. Since go live, the ID.me solution stopped more than 1.6 million potentially fraudulent claims from Oct. 1– Dec. 31, 2021.
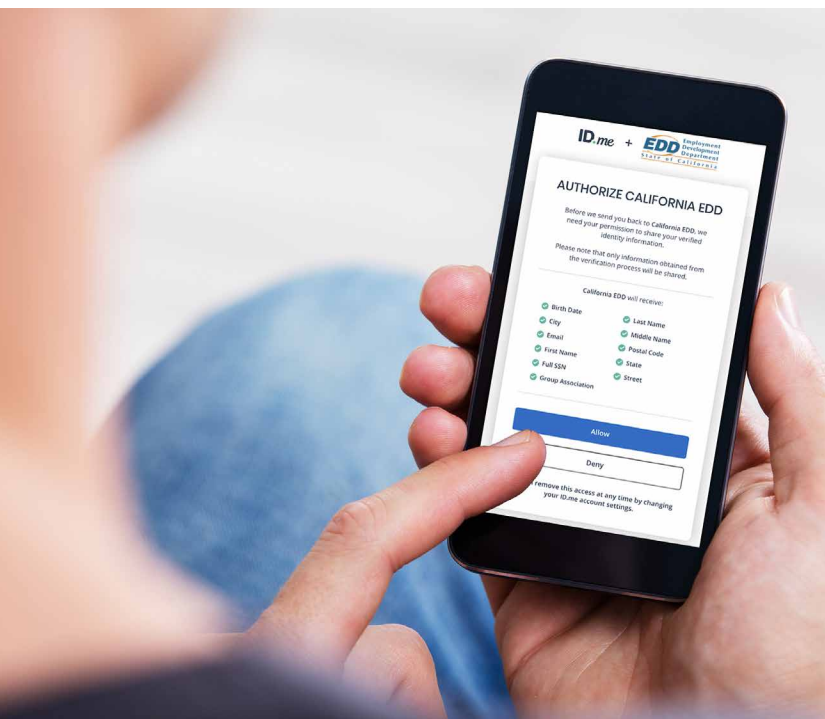
Migration of CalHEERS Health Benefits Exchange to the Cloud
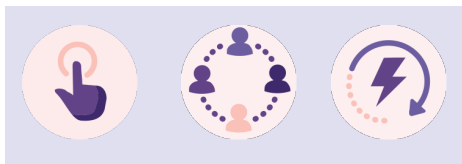
The automated California Healthcare Eligibility, Enrollment, and Retention System serves as the consolidated system support for eligibility, enrollment, and retention for the California Health Benefit Exchange (also known as Covered California), Medi-Cal, and Healthy Families. The system also streamlines resources from which individuals and small businesses will be able to research, compare, check their eligibility and purchase health coverage.

The migration of CalHEERS to the cloud required tremendous collaboration with partners at Office of System Integration, Department of Healthcare Systems, and vendors. The goal was to Implement a highly available, elastic, secure and redundant cloud architecture leveraging AWS capabilities and infrastructure for operational efficiencies. CalHEERS enables cost reduction with more effective and efficient use of infrastructure and compute resources, as well as the fastest processors and network for optimum performance and response for consumers and business partners. Because of the great coordination efforts and collaboration among the teams, the assessment was completed ahead of schedule with no impact to the migration efforts or go-live schedule.

This implementation and migration reduced capital and operational expenditures by leveraging the cloud infrastructure and avoiding replacement of other aging infrastructure.

Fabric Networking for Enterprise and Partner Connectivity

Regardless of the nature of an emergency, the California Office of Emergency Services is in the business of communications and collaboration. A communications network needs to be highly flexible and secure to provide connectivity to multiple state, local and federal partners. Leveraging an educational campus network methodology, Cal OES, working alongside a vendor, successfully deployed networking to manage the infrastructure supporting the State Operations Center (SOC) and Enterprise Services. The technology provides a flexible and secure network topology to support multiple independent networks utilizing the same physical wiring and addresses concerns of partner data leakage and communications crossover that can happen in this kind of digital environment.

Using this new networking technology, Cal OES has been able to provide virtual wire connectivity for several emergency-response departments, including Cal Fire, FEMA, Public Health and Water Resources.

Collaboration Delivers Improved Water Management

The 2020 and 2021 water years have emerged as the driest two-year period in California's history, exceeding the 1976-77 drought and even the Dust Bowl-era droughts of the 1920s and 1930s. This significant drought has put added pressure on the state's water right system.

The Water Board's Electronic Water Rights Information Management System (eWRIMS) used by the Water Boards was too antiquated and inflexible to make real-time water use decisions. At the direction of the Administration, a group of state agencies – including CDT, Water Boards, Governor's Office, California Environmental Protection Agency, and Department of General Services – met to develop a proposal to update the water rights data system with Updating Water Rights Data for California (UPWARD). UPWARD allows the Water Board to address many drought-related challenges that impact the protection of senior water rights and environmental and public trust resources.

The UPWARD project demonstrates the rapid progress that can be achieved through the continuous collaboration and combined efforts of the Water Board, CalEPA and CDT. It is this type of partnership that makes transformation possible and will enable the selection and implementation of effective technology to address the current challenges.

Fostering a Partnership for a Successful Procurement

The Franchise Tax Board kicked off the second phase of its 30-year Tax Systems Modernization plan in July. This 66-month Enterprise Data to Revenue Phase 2 (EDR2) project will move three of FTB's major legacy case management systems onto a single enterprise platform, create new analytic models to improve case selection and new self-service options for a better customer experience and increased the ease of taxpayer compliance. It took five years collaborating with CDT and DOF and working closely with its vendor community before FTB had a successful procurement.

Through this partnership the team:

- Conducted market research of the vendor community to aid the state in refining project requirements. This included a Request for Information and two Pre-Solicitation Documents.

- Hosted collaborative meetings with the vendor community, including an EDR2 Vendor Workshop and a Bid Walkthrough Conference.

- Established a Qualified Business Partner (QBP) pool of vendors possessing corporate viability, experience, and a reasonable likelihood to provide a 'value effective' EDR2 solution to the state through an Invitation to Partner process.

- Facilitated confidential discussions and provided detailed feedback on vendors' proposals regarding technical, functional and project management aspects of their proposals, including implementation. This was intended to increase the QBPs' likelihood of submitting a Final Proposal and Best and Final Offer.

The collaboration among FTB, CDT, DOF and the vendor community culminated in the awarding of the EDR2 contract and July 1 project kick-off.