DAVID Y. IGE
GOVERNOR

DOUGLAS MURDOCK
CHIEF INFORMATION OFFICER

OFFICE OF ENTERPRISE TECHNOLOGY SERVICES
P.O. BOX 119, HONOLULU, HI 96810-0119

December 30, 2021

The Honorable Ronald D. Kouchi
  President, and Members of the Senate
Thirty-First State Legislature
State Capitol, Room 409
Honolulu, Hawaiʻi 96813

The Honorable Scott K. Saiki
  Speaker, and Members of the
    House of Representatives
Thirty-First State Legislature
State Capitol, Room 431
Honolulu, Hawaiʻi 96813

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

Pursuant to sections 27-43(a)(6) and 27-43(e), Hawai`i Revised Statutes (HRS), the attached annual report is hereby submitted to update you on the status and implementation of the State information technology strategic plan, the activities and programs under the authority of the CIO and the IT Steering Committee, and the expenditures of all moneys received from all sources and deposited into the IT Trust Account and the Shared Services Technology Special Fund.

In accordance with HRS section 93-16, this report may be viewed electronically at http://ets.hawaii.gov (see "Reports").

Sincerely,

Douglas Murdock (Dec 30, 2021 15:09 HST)

Douglas Murdock
Chief Information Officer

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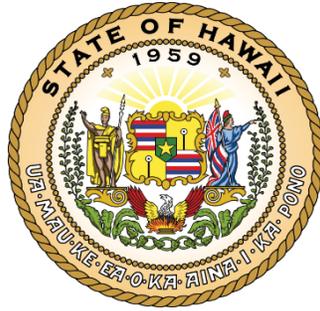
ENTERPRISE TECHNOLOGY SERVICES

ANNUAL REPORT 2021

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ABOUT US

The Office of Enterprise Technology Services (ETS) provides governance for executive branch IT projects and seeks to identify, prioritize, and advance innovative initiatives with the greatest potential to increase efficiency, reduce waste, and improve transparency and accountability in state government.

Composed of nine branches, ETS also supports the management and operation of all state agencies by providing effective, efficient, coordinated,and cost-beneficial computer and telecommunication services. The nine branches include: Production Services, System Services, Technology Support Services, Client Services, Enterprise Systems, Network, Security, Enterprise Architect, and Program Management.

The Office of Enterprise Technology Services (ETS) was established by Hawaii Revised Statutes §27-43. ETS is headed by a full-time chief information officer (CIO) to organize, manage, and oversee statewide information technology. The chief information officer is appointed by the governor and reports directly to the governor. A key responsibility of the CIO is to develop, implement, and manage the state information technology strategic plan.

Hawaii Revised Statutes §27-43 also establishes an Information Technology Steering Committee (ITSC) to work with the CIO in developing the State's information technology standards and policies, including the strategic plan. The ITSC meets quarterly and held five meetings in 2021.

IT STEERING COMMITTEE MEMBERS (served during 2021)

Douglas Murdock (Chair), Office of Enterprise Technology Services, State of Hawaii

Jarrett Keohokalole, State Senate	Kevin Thornton, Hawaii State Judiciary
Michael Nishida, First Hawaiian Bank	Kyle Yamashita, House of Representatives
Christine Sakuda, Transform Hawaii Government	Marcus Yano, CBTS Hawaiian Telcom
	Garret Yoshimi, University of Hawaii
Joel Kumabe, Unisys Corporation	Mel Horikami, Optimum Business
Benson Choo, Finance Factors	Solutions

The CIO or designee also serves on the following state committees:
- Access Hawaii Committee (ex officio Chair)
- Information Privacy and Security Council (ex officio Chair)
- Enhanced 911 Board (ex officio)
- Hawaii Health Data Steering Committee (ex officio)
- Broadband Assistance Advisory Council (appointed)

COVID-19 Pandemic Response

SAFE TRAVELS DIGITAL PLATFORM

The Safe Travels Digital Platform supports the Safe Travels Hawaii program, which is a multilayered process designed to protect the health and safety of our visitors and residents from the spread of COVID-19. It has allowed for the opening of tourism in our state during the pandemic and put Hawaii on the path to economic recovery.

The state uses the Safe Travels Hawaii digital platform to gather trip and health information from travelers. Data gathered may be used by the Department of Health for contact tracing efforts and by law enforcement agencies to enforce quarantine rules.

Since the project was launched on August 11, 2020, more than 9.25 million travelers (transpacific and interisland) have used the Safe Travels Digital Platform.

The Safe Travels Digital Platform project is spearheaded by the Office of Enterprise Technology Services in collaboration with the Department of Transportation, Department of Health, Department of Defense, Hawaii Tourism Authority, Office of the Attorney General, and the counties.

OFFICE OF ATTORNEY GENERALS TRAVEL EXEMPTION ONLINE APPLICATION

The ETS staff developed an online system for the submission and approval process of quarantine exemptions issued by the Department of the Attorney General under the Safe Travels Hawaii program. The system was launched September 18, 2020.

On this site, travelers entering the State of Hawaii can apply for a limited exemption from the mandatory self-quarantine. Since the launch, the ATG Office has processed nearly 50,000 travel exemption requests for reasons such as CISA work, medical, funeral, compassion, and COVID-19 recovery related travel.

SAFE TRAVELS HEALTH PASS PARTNERS

Safe Travels implemented the Health Pass Program with partners CLEAR, CommonPass and AZOVA. These partners help Hawaii enhance traveler experience by providing them with another avenue to verify their COVID-19 test and vaccine information before arrival.

The Health Pass partners also expands the network of testing partners and validates it before entering it into the Safe Travels system. When it comes to vaccines, the vaccine information is validated with databases available to them from other States.

The partnerships offer another option to the multi-layered approach of reviewing travelers' information and providing exception before arriving in Hawaii. These opportunities support the reopening of our economy by allowing more travelers to enter Hawaii while considering the health and safety of visitors and residents alike.

HAWAII SMART HEALTH CARD

The Hawaii SMART Health Card enables individuals who received their COVID-19 vaccinations in Hawaii to create a state-issued digital SMART Health Card that may be used to confirm their vaccination

status to businesses and venues that require it. On the program's first day alone, 19,125 health cards were created. With updates made to the application after the rollout, more than 251-thousand people now have a Hawaii SMART Health Card.

SUPPORTING TELEWORKING

The creation of ETS allowed the state to take a fresh look at the capabilities and infrastructure that allow government operations to continue in the event of unplanned disruptions, disasters, and emergencies. New mobile workforce and remote computing (telework) initiatives permitted employees to work from any location outside their usual offices that offered wired, wi-fi, or cellular phone internet access.

As specific examples, the state's Cloud First policy guidesthe migration of critical infrastructure and services from on-premise data centers to mainland cloud service providers; ETS works with all Executive Branch departments to implement the broad package of cloud-based Microsoft Office 365 tools that offer securedata sharing within and among departments using OneDrive and SharePoint, and convenient remote group meetings using Skype and Teams; ETS adopts Adobe platform providingelectronic workflow and electronic signatures; and ETS conducts continuous training and education activities for departments and employees to learn how to use and redesign their business processes to apply those new productivity tools. This effort is continuing with our movement of our Enterprise Resource Programs to hosted or cloud environments and our current effort to shift from a physical mainframe to mainframe as a service.

ETS also provides leadership, technical guidance and administrative support to the Access Hawaii Committee, which is responsible for management and oversight of the state-wide citizen portal. This portal allows citizens to complete many state and county government services online and complete transactions without having to go to a government office.

In June 2021, Teams Calling was implemented for the Office of Enterprise Technology Services (ETS) and a division in DOH. Teams Calling provides a cloud-based phone system in Microsoft Teams. All ETS staff were migrated over to Teams from Hawaiian Telcom phone lines, which provided cost savings and better communication abilities for teleworking with external parties.

Microsoft Teams Activity 2021

Number of activities by type for licensed users


| Channel messages | Chat messages | 1:1 calls |
| Total meetings |
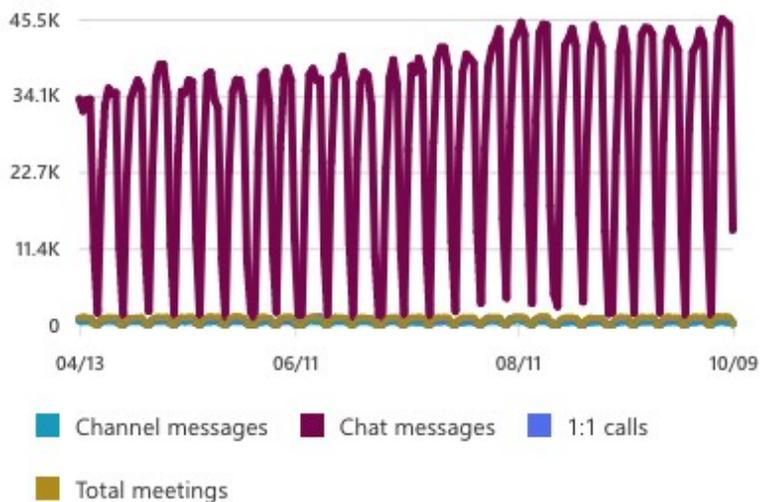
Exchange Email Usage

Number of daily unique users by app

Outlook (Windows)	Outlook (Mac)
Outlook on the web	Outlook (mobile)	Mobile
Mail (iOS/Mac)	IMAP4 app	POP3 app
SMTP app
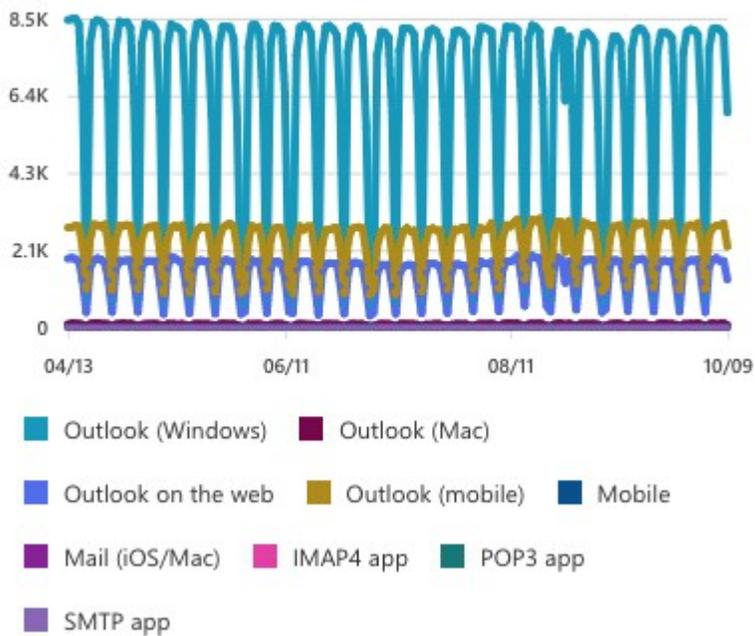
OneDrive Usage 2021

Number of total and active accounts

■ Total accounts ■ Active accounts

Number of total and active files
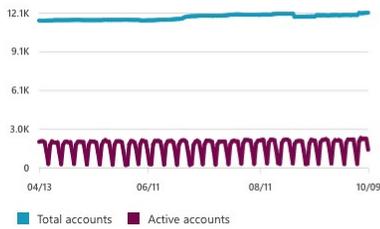
■ Total files ■ Active files
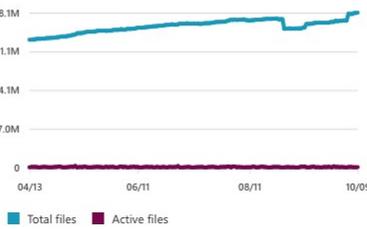
Amount of storage used
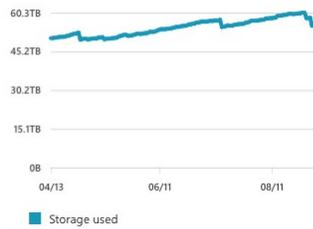
■ Storage used

SharePoint Usage

Number of total and active sites

■ Total sites ■ Active sites

Number of total and active files
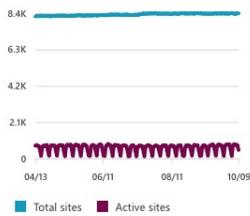
■ Total files ■ Active files
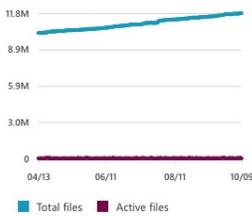
Amount of storage used

■ Storage used
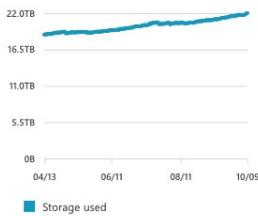
Number of page views

■ Total page views
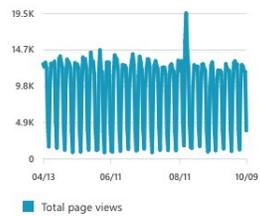
SUPPORTING AGENCIES

Department of Labor and Industrial Relations. Since the pandemic began in 2020, ETS continues to support and assist the Department of Labor and Industrial Relations' (DLIR), Unemployment Insurance (UI) Division with its response. More than 200,000 people filed for unemployment benefits in 2020 when the State was shutdown. In 2021, the Federal government provided funding assistance through several programs to aid Hawaii residents who filed claims.

To support the distribution of funds made available to residents, ETS assisted DLIR with the implementation of the following programs:
1) Federal Pandemic Unemployment Compensation (FPUC)
2) Pandemic Emergency Unemployment Compensation (PEUC)
3) Low Earnings Act (LWA)
4) Multi Earner Unemployment Compensation (MEUC)
5) Pandemic Unemployment Act (PUA extension)
6) Extended Benefits (EB20), and
7) American Rescue Plan Act (ARPA).

The CSB Project Team worked with DLIR to do the analysis, make program changes, and complete testing and implementation of those programs.

EMERGENCY OPERATIONS

ETS has been providing 24/7 IT & telecommunication staffing support for the State Emergency Operations Center at Diamond Head where they monitor operational status of statewide communications networks, assist with expanding state worker telework and teleconferencing capabilities, and provisioning Internet broadband and IT services for a newly created State Law Enforcement Coalition (SLEC) command center.

ETS assisted Hawaii Emergency Management Agency (HI-EMA) in the implementation of Dynamics application in their business processes to help track inventory and usage of personal protective equipment.

PUBLIC ACCESS TO MEETINGS

With state government offices limiting public access during the COVID-19 disruption, ETS staff has been working with many state boards and commissions to evaluate virtual meeting platforms to safely convene their public meetings and continue to conduct business. Several pilot demonstrations and implementations continue to integrate new technologies into the state meeting processes.

IT STRATEGIC PLAN PROGRESS
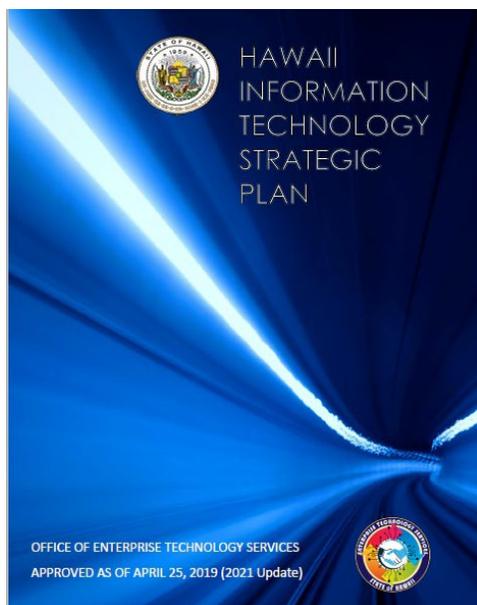
Pursuant to HRS section 27-43, an updated Hawaii Information Technology Strategic Plan was submitted to the Legislature before the convening of the 2021 Session. The plan updates the IT Strategic Plan that was to be submitted ahead of the 2020 Legislative Session.

The 2019 Hawaii Information Technology Strategic Plan was developed with input from stakeholders, including the staff at ETS, the ITSC, representatives from departmental business and ITstaff, and members of the community. The final plan was approved by the state Information Technology Steering Committee for implementation. The IT Strategic Plan can be found here: Plan

The purpose of the Strategic Plan is to:

- Clearly articulate the State Information and Technology future vision, mission, strategic priorities, expected outcomes, major initiatives to achieve those priorities,and responsible owners for key plan elements.

- Establish a system for implementation of the plan over the first year and next four years.

- Provide guidance to ETS and department IT organizations to help with alignment throughout the state.

- Create an instrument to support awareness and accountability for all parties to the strategic plan.

- Fulfill the requirement of Hawaii Revised Statutes §27-43 and House Concurrent Resolution 94.

VISION, MISSION, VALUES

The Vision, Mission, and Core Values statements that guide the Strategic Plan are listed on the following pages:

VISION, MISSION, CORE VALUES

VISION STATEMENT

Transformative information and technology-enriched government that serves all the people of Hawaiʻi and the ʻāina*

MISSION

Seamlessly blend innovative IT with well-engineered business processes to deliver and support dynamic and sustainable systems that empower our workforce to accelerate excellent outcomes in support of the state's policies, decisions, operations and services.

CORE VALUES

Aloha	We treat everyone with dignity, respect and kindness, reflecting our belief that people are our greatest source of strength.
Kuleana	We uphold a standard of transparency, accountability and reliability, performing our work as a government that is worthy of the public's trust.
Laulima	We work collaboratively with business, labor and the community to fulfill our public purpose.
Kūlia	We do our very best to reflect our commitment to excellence.
Pono	We strive to do the right thing, the right way, for the right reasons to deliver results that are in the best interest of the public.
Lōkahi	We honor the diversity of our employees and our constituents through inclusiveness and respect for the different perspectives that each brings to the table.
Hoʻokumu	We continually seek new and innovative ways to accomplish our work and commit to finding creative solutions to the critical issues facing this state.

*The ʻāina (land) is not just soil, sand or dirt. The ʻāina is a heart issue for the people of Hawaiʻi. The very word ʻāina brings forth deep emotion evolved from ancestral times when people lived in nature as an integral part of it. We chose to incorporate the ethical, philosophical, and spiritual aspects not only present in the state's vision and mission statements, but also that are present in the culture that make Hawaiʻi Hawaiʻi.

STRATEGIC PRIORITIES

Our IT Strategic Priorities reflect 7 key focus areas necessary to take full advantage of the state's investments and attain long-term success:

Partner for Successful Outcomes	Shape the partnership between government functions and IT by creating a standard framework to ensure successful outcomes. ❖ *Team Lead: ETS Enterprise Program Manager*
Expand Statewide Cyber Security Strategy	Extend the statewide cyber security strategy to protect the State's IT infrastructure and constituent data through adoption of cyber security industry best practices across the State's IT systems. ❖ *Team Lead: ETS Chief Information Security Officer*
Enhance the Value of State Data	Maximize the value of State data by designing, implementing and governing State systems for data stewardship, sharing, and public use. ❖ *Team Lead: ETS Enterprise Architect*
Optimize Enterprise Systems	Optimize ETS enterprise systems to leverage the state's investment in centralized IT services. ❖ *Team Lead: ETS Chief Operations Officer*
Extend IT Portfolio Governance	Extend the State IT Governance Model to better align the state's functions with resources and ensure the State follows industry best practices and garners the full benefits of its investments. ❖ *Team Lead: ETS Enterprise Architect*
Implement Dynamic and Sustainable IT Operations	Implement dynamic and sustainable IT operations to ensure business systems are up-to-date and ready to support the current and future needs of business users and citizens at all times. ❖ *Team Lead: ETS Chief Governance Officer*
Digital Workforce Development	Establish a continuous learning culture and growth mindset to modernize how we work and enable the state to develop and sustain the digital workforce needed in a constantly evolving IT world. ❖ *Team Lead: ETS Personnel Officer*

2019 IT STRATEGIC PLAN ADOPTION PROGRESS

- In 2021, ETS continued to refine strategy governance process, executive sponsor, charter, program lead, and working group in each strategic area. Progress was limited due to the need to prioritize response to the crisis.

- ETS adopted the IT Management & Governance Framework shown below as our high-level prioritized reference model for best practices in tactics, techniques and procedures. ETS is working with Info-Tech Research Group since 2019 to develop common processes and tools for use by ETS and state agencies in managing IT operations.
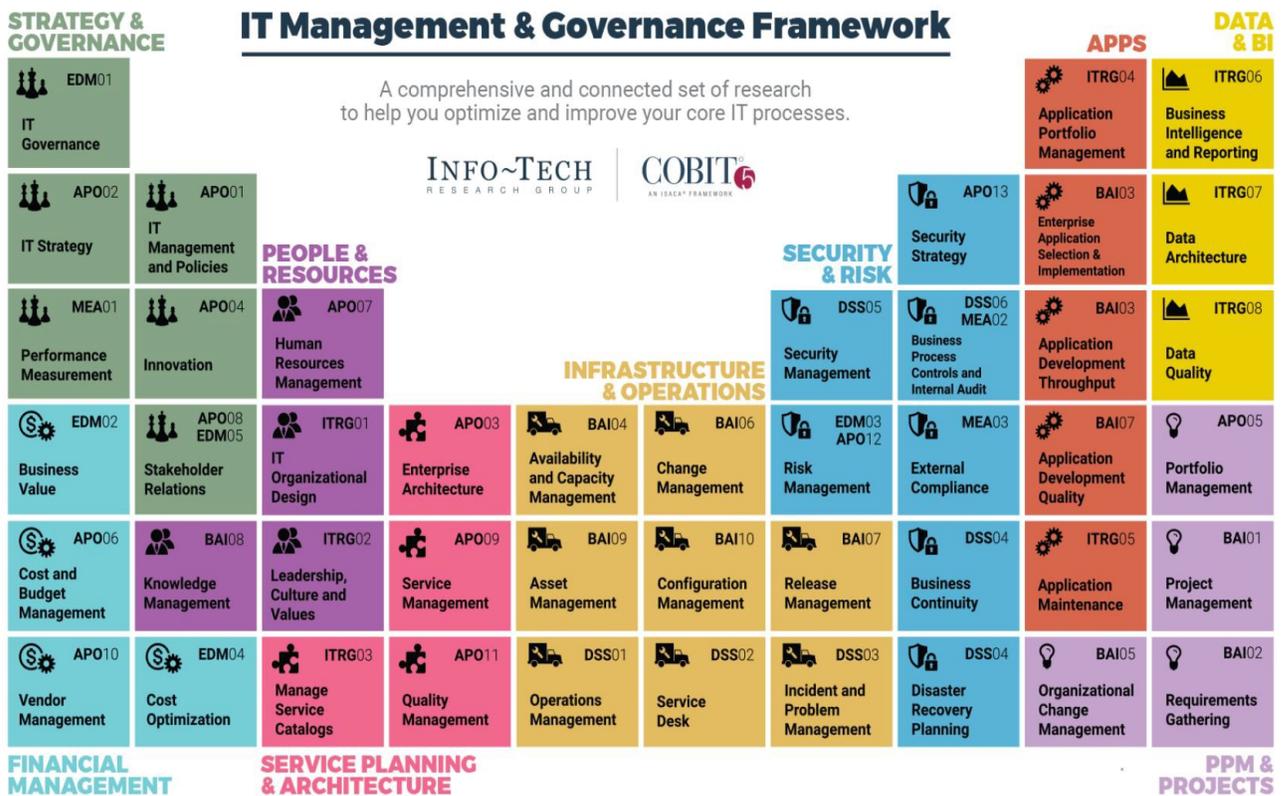
- A high-level Capability Maturity Model measurement framework is available in the IT Management and Governance Framework for implementation. We are working on measurement dashboards.

PARTNER FOR SUCCESSFUL OUTCOMES

Shape the partnership between government lines of business and IT by creating a standard framework to ensure successful outcomes.

The following programs align with the key focus area of Partner for Successful Outcomes, which is one of the strategic priorities of the Hawaii Information Technology Strategic Plan.

The Hawaii Modernization Initiative, also known as HiMod, is the State's modernization project team that works to transform government by replacing legacy systems to create the state's new integrated Enterprise Resource Planning program.

Our strategy, adopted in 2016, is to break strategic systems into smaller transactional pieces in order to reduce complexity and increase success. So far, we have upgraded the state Human Resource Management System and implemented the new Payroll and Time and Leave Management systems. The team is currently preparing for design, development, and implementation of a new Financial Management System. HiMod is governed by an Executive Governance Committee.

STATEWIDE FINANCIAL SYSTEM REPLACEMENT

The 2020 Legislature granted funding to continue modernization programs to include finance operations and business processes. In mid-November, the State posted a Request for Proposal (RFP) to evaluation applications and systems integrators for the modernization of the finance, accounting and budgeting operations. Proposals were reviewed in 2021. The state has contracted with LSI to implement an SAP-based system and issued a Notice to Proceed.

Sponsored by the Department of Accounting and General Services and the Department of Budget and Finance and supported by the Office of Enterprise Technology Services, the initiative will involve the key central agencies as well as a number of jurisdictions and departments to ensure that business processes may be aligned to the enhanced delivered functionality of a modern finance application.

PARTNER FOR SUCCESSFUL OUTCOMES

TIME AND LEAVE PROJECT

- The Time and Leave Project was launched by HiMod in May 2019 with the first departments scheduled to go live in May 2020. The project was completed in Oct. 2021, on-time and on-budget, with the State's Executive Branch, Legislature and Office of Hawaiian Affairs on the unified system.

- The Time and Leave Project allows participating state departments, agencies, and jurisdictions to process electronic timesheets and leave requests in HIP, replacing many manual forms. The new system increases efficiency by standardizing practices and reducing pay processing times and pay errors. The system has reduced paper forms by at least 40,000 pages per month.

Online Leave Request Example

Online Time Reporting Example

PARTNER FOR SUCCESSFUL OUTCOMES

HAWAII PAY PROJECT

HiMod and the ETS Enterprise Systems Branch continue to maintain the HawaiiPay Project, which brought the State's payroll system into the twenty-first century with a modern, efficient platform. The Hawaii Information Portal (HIP) went live with the first groups of employees in May 2018 and covered all employees, with the inclusion of the Department of Education and University of Hawaii, in January 2019. The system also provides payroll service for the Judiciary, Legislature, and the Office of Hawaiian Affairs.

□ Nearly 70,000 State employees are enrolled for direct deposit.

□ An average of 4,500 employees use the HIP call center monthly.

□ Modernization Cost: $17,037,148 contract with CherryRoad Technologies, Inc. covering Payroll and Time and Leave Management.

PARTNER FOR SUCCESSFUL OUTCOMES

HAWAII INFORMATION PORTAL (HIP) CONTINUED EXPANSION
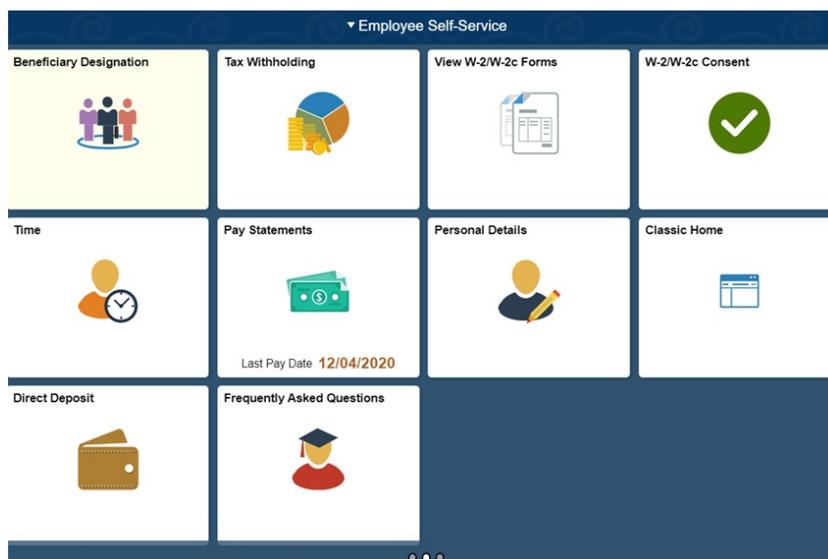
- The Hawaii Information Portal expansion has also extended the use of the Human Resources part of the system to both the Legislature and Office of Hawaiian Affairs to offer enhanced integration and workflow capabilities to these entities, which further leverages the statewide investment in the enterprise human resource, payroll and time and leave system.

- Due to the Hawaii Information Portal (HIP) continued expansion of functionality and addition of time and leave, the State has identified opportunities to engage in data sharing with other statewide systems such as the benefits system under the Employer-Union Trust Fund (EUTF) to start to reduce manual paper changes for addresses, union codes and termination status notifications.

- Single-Sign-On (SSO) capabilities were also implemented during the second quarter of 2020 to allow secure, remote access to HIP for payroll and human resources processors and employees in the Executive Branch. This capability allowed many employees who transitioned to teleworking to access the system from any location (home office or mobile).

PARTNER FOR SUCCESSFUL OUTCOMES

PAPER REDUCTION AND EXPANSION OF SELF-SERVICE

- The transition to online pay statements has reduced the paper issuance from over 3.2 million checks and statements annually to about 60,000 checks annually.
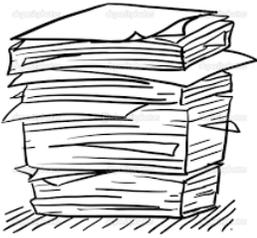
  - The addition of online annual W-2 statements in 2020 has reduced the paper printing for about 50 percent of the statewide employee population and it is expected that more employees will opt for the online statement as employees may receive W-2s a few days earlier than the required January 31st deadline each year.

- An average of nearly 20,000 State employees log into Employee Self-Service each month to direct various changes to their records to include direct deposit, addresses, W-4 tax withholdings, payroll beneficiary, consent to electronic W-2s, emergency contacts, and recently, leave requests and changes.

Tools for Managers via Self-Service

PARTNER FOR SUCCESSFUL OUTCOMES

DIGITAL GOVERNMENT SERVICES

NIC Hawaii is the contracted State of Hawaii Portal Program manager and has successfully partnered with 90+ state agencies and across jurisdictions to provide more than 146 services for the State of Hawaii and counties. The number decreased from 160 this year, largely due to loss of DCCA PVL and DLNR BOC services.

In April 2021, NIC was acquired by Tyler Technologies, Inc. With the addition of NIC's highly complementary, industry-leading digital government solutions and payment services to Tyler's broad client base and multiple sales channels, the combined company is well equipped to address the tremendous demand at the federal, state, and local levels for innovative platform solutions. Together, NIC and Tyler will connect data and processes across disparate systems and deliver essential products and services to all public sector stakeholders.

NIC HI provided two no-cost projects to the state in FY2021. The State Calendar application was originally launched nearly 20 years ago and with the change in recent rules regarding the posting of agendas online due to COVID-19, it was time to upgrade this service. The updated site is responsive, meets accessibility requirements, has a fresh look and feel, is easy to navigate and offers search options by time period and by calendar name to find events of interest. With this no-cost upgrade the user experience has drastically improved and the site is modern and appealing. The other upgrade provided at no cost is the Hawaii.gov portal site. With more than 15 million visitors in 2020 alone, the primary focus of the redesign was to improve the user experience. NIC HI updated all site information and navigation based on analysis of data and past audience behavior.
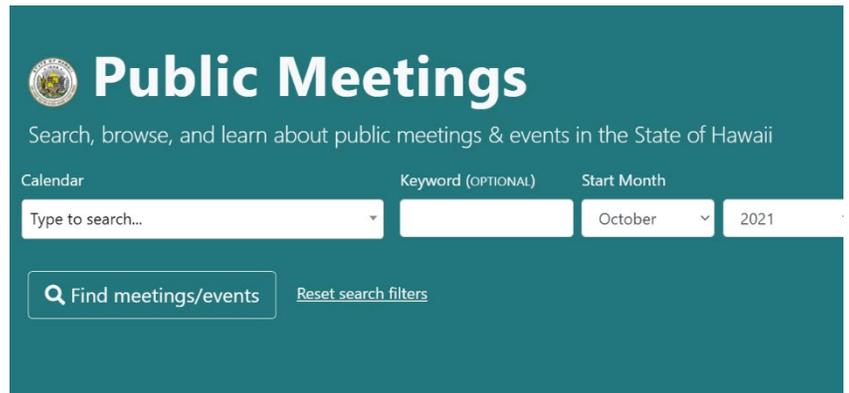
PARTNER FOR SUCCESSFUL OUTCOMES

Outstanding Website

Hawaii Legislative Reference Bureau (LRB) and NIC HI from Web Marketing Association Award

The Hawaii Legislative Reference Bureau (LRB) and NIC HI have been nationally recognized with a Web Marketing Association award for Outstanding Website. The award is an extraordinary honor, and LRB received top scores in the ease of use, copywriting, content and design criteria.

ETS and NIC HI collaborated on a few different projects outside of the typical services that NIC HI provides. NIC HI has been a proud sponsor of the ETS hosted Hawaii Annual Code Challenge event for the past few years and has also sponsored a challenge project at this event for the past two years. NIC HI's participation in this event led to two high school HACC participants acquiring an internship with NIC HI on their quality assurance team. ETS and NIC HI also collaborated at the 2020 Hawaii Digital Government Summit in a speaker panel discussing the "Acceleration of the Government Experience".

Access Hawaii Committee & Portal Program Manager

In 2000, the Governor enacted Act 292, which establishes the Access Hawaii Committee (AHC). AHC manages the state digital government portal with the assistance of ETS. The CIO is the Chair of the AHC.

ETS has a Portal Program Manager who provides guidance to the AHC relating to strategies for online payment and processing, internet initiatives,electronic document filing, paperless initiatives, and web application development. The Portal Program Manager also monitors the portal provider's activities to ensure compliance with terms and conditions of the portal provider contract, reviews the portal provider's financial reports, evaluates new and existing Statements of Work, fee agreements, priorities, and Service Level Agreements being negotiated between government agencies and the portal provider. The Portal Program Manager collaborates with the portal provider and government agencies to promote e-government and to increase on-line services that can be easily, conveniently, and securely accessed by the public.

PARTNER FOR SUCCESSFUL OUTCOMES

In December 2020, AHC approved the portal contract for an extension of three (3) additional years, beginning January 3, 2022, recognizing the significant contributions and value-added services provided by NIC Hawaii. ETS and NIC HI continue to have a strong partnership and look forward to providing additional services to improve constituent interaction with the government in the upcoming years.

INITIATIVES

- **AWS MIGRATION.** NIC HI worked closely with ETS to discuss the Amazon Web Services (AWS) architecture and solidify an AWS Migration Plan. 96% of the services are currently migrated to AWS. There are a few services that remain due to additional federal requirements that must be met due to security reasons. During this migration period, NIC HI was simultaneously working on other major upgrades including upgrading the mobile payment interfaces, online chat system, and online reporting software for all services.

- **HAWAII CITIZEN SINGLE SIGN-ON PROGRAM.** The eHawaii.gov Single Sign-On (SSO) service is used by over 70 online portal services. As the State of Hawaii made the decision to universally use Microsoft Azure SSO for online services/portals (Hawaii Citizen Access Program), NIC HI and ETS collaborated on integrating the eHawaii.gov SSO with the Azure Active Directory Business-to-Consumer (AD B2C) solution to allow existing eHawaii.gov portal services to continue using the eHawaii.gov SSO. NIC HI has been providing customer service support to end users, although customer service support fees are yet to be determined and executed. Currently, the new Department of Commerce and Consumer Affairs - Professional and Vocational Licenses Renewal system uses this SSO service. ETS will determine next steps for funding and migrating other services to SSO.

- **DYNAMICS FRAUD PROTECTION.** In August 2021, ETS started working with the Department of Human Services (DHS) to architect and implement Dynamics Fraud Protection to provide more robust authentication security and identity proofing for Business-to-Consumer (B2C) access to public-facing applications.

PARTNERSHIP AND GOVERNANCE OF MAJOR SYSTEMS

As part of Partnering for Successful Outcomes and IT Governance, ETS monitors progress on a state-wide portfolio of major systems from ideation to recently operational to help departments ensure that systems are properly engineered and ready to meet business requirements. Below is the list of major systems ETS is monitoring and assisting with as of the end of 2021:

COMPLETED - Operational	Department
Tax Modernization	Tax
HiMod Payroll & Human Resources (done)	DAGS/DHRD
HiMod Time & Leave Management	DAGS-Statewide
ERS Financials	B&F-ERS
ERS Benefits Replacement	B&F-ERS
OHA Financials	OHA
PVL Ho`ala License Management System	DCCA
OPERATIONAL – Developing Next Phases	**Department**
Harbor Master Information System	DOT-HAR
Behavioral Health Inspire	DOH
DOE Financial Management System	DOE
IN PROGRESS – Developing	**Department**
Statewide Enterprise Financial Mgt System (IV&V)	DAGS-Statewide
Benefits Eligibility System (IV&V)	DHS
Disability Compensation (IV&V)	DLIR
Health Benefits Administration System (IV&V)	B&F-EUTF
DOT-HWY Financial Management System (IV&V)	DOT-HWY
Unemployment Insurance Modernization (IV&V)	DLIR
Case & Document Management System (CDMS) (IV&V)	DCCA-PUC
STARTING 2022	**Department**
Corrections Management (pending funding)	PSD
Vital Records Management Info System	DOH
BRIMS Business Registration	DCCA
E-Procurement System	DAGS-SPO
STARTING 2023	**Department**
Child & Adult Welfare	DHS
KEIKI Child Support Enforcement Modernization	ATG

EXPAND STATEWIDE CYBER SECURITY STRATEGY

Expand the statewide cyber security strategy to protect the State's IT infrastructure and constituent data through adoption of cyber security industry best practices across the State's IT systems.

MISSION: *Protect and safeguard data passing through and stored on state government technology infrastructure.*

THREAT: *The state cyber infrastructure is under constant attack.*

800+ Billion Cyber
Threats Blocked in 2021

1+ Million
Security Events
Investigated

267
Incidents
Escalated
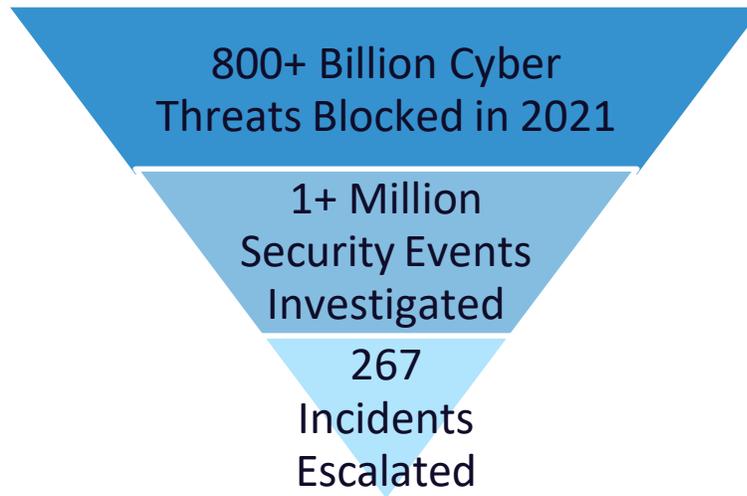
TEAM:

- Chief Information Security Officer

- Seven full-time ETS Cyber Security Staff

- Other State Staff: approximately part time 20 employees on state teams maintaining data communication networks, enterprise software platforms, and cloud computing services

- External Support: Multi-State Information Sharing and Analysis Center provides remote monitoring with 365/7/24 alerts and advisories of state network and Internet activities

MS-ISAC®
Multi-State Information
Sharing & Analysis Center®

EXPAND STATEWIDE CYBER SECURITY STRATEGY

CYBER SECURITY NEW PROGRAMS
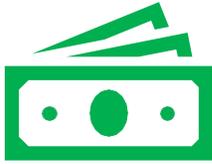
- The 2019 Legislature appropriated $1,038,240 in fiscal year 2020 and $1,263,902 in fiscal year 2021 for cyber security capability enhancements by Office of Enterprise Technology Services.

So far, ETS implemented numerous applications executive branchwide to enhance its cyber security programs:

Advanced endpoint protection: Strengthens the protections on laptops, PCs and servers to detect and respond to emerging threats.

Enterprise visibility and reporting: Improve our ability to identify and report on software installations across our managed devices.

Phish reporting button: Simplifies the process to report suspected phishes and provides fast feedback on whether the message is a verified phish, simulated phish, or being manually reviewed

External email label: Makes external e-mail easy to identify while making internal e-mail more difficult to impersonate to reduce the risk of phishing. Throughout the calendar year, the email security solution detected over 50,000 malicious emails; 98% being blocked.

Email filtering: A new user digest classifies Email as spam or junk and sends it to a personal quarantine instead of being delivered to the inbox or junk folder.

Web enhancer: Provides content delivery network services, cyber-attack mitigation, and a web application firewall for the purposes of increasing security and performance of websites.

CYBER SECURITY TRAINING

ETS has been working with the State Department of Human Resources to provide Cybersecurity Awareness Training as part of the State's foundational knowledge set. Information technology integrates with every area of State business and educating and empowering employees to be safe and secure when using computers not only benefits the State but also our employees' homes.

EXPAND STATEWIDE CYBER SECURITY STRATEGY

PHISHING AWARENESS CAMPAIGN

ETS provides cyber security awareness campaigns quarterly through simulated phishing emails. Educating and empowering employees to be safe and secure when using computers not only benefits the State but also our employees' homes.

Due to the abrupt disruptions caused by the 2020 COVID-19 Pandemic and shifting of priorities, the cyber security team only conducted and managed two enterprise-wide campaigns. From the two campaigns, there was a 3% decrease of users who interacted with the campaign message.

13,000+ USERS
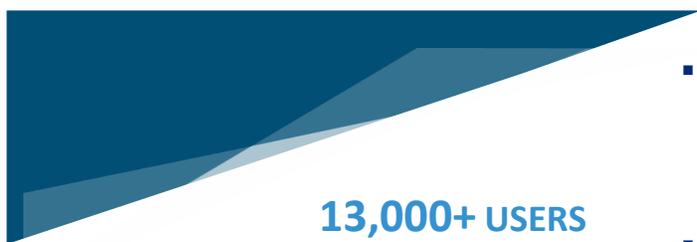
1% CLICKED ON THE PHISHING EMAIL

ELECTION SYSTEM

The Department of Homeland Security has designated elections systems as a critical infrastructure. ETS provides the cybersecurity monitoring, network management, and virtual server support to facilitate statewide elections.

ETS provides the computing, communication network infrastructure, and many layers of cyber security protections for the State Office of Elections digital assets.

- As the processes and systems that collect and count votes are not exposed to the Internet at any time, voters can be confident that election counting results are accurate and safe.

- The State of Hawaii was awarded more than $3M under the Federal government's 2018 Help America Vote Act.

- To see Hawaii's Program Narrative, click here.

EXPAND STATEWIDE CYBER SECURITY STRATEGY

CYBER SECURITY MONTH

Gov. David Ige proclaimed October Cybersecurity Awareness Month in Hawaii, in recognition of the state's role in identifying, protecting its citizens from and responding to cyber threats.

The State continues its work on several cybersecurity initiatives, such as promoting educational opportunities like CyberStart America and developing a skilled cyber workforce by working with lower and higher education communities. It is also working to enhance the cyber security of critical infrastructure providers. Additionally, the State is continuing its work in improving coordination of county, city, state and federal government cyber security activities, leveraging the Fusion Center's role in working with private sector partners to improve their cyber security posture.

CYBERSTART AMERICA

ETS and the state of Hawaii continues to support educational initiatives that promote careers in cybersecurity. The State supported the kickoff of CyberStart America, a national competition that is a fun, interactive online program composed of digital challenges aimed at introducing high school students to cyber security while encouraging them to enter the field.
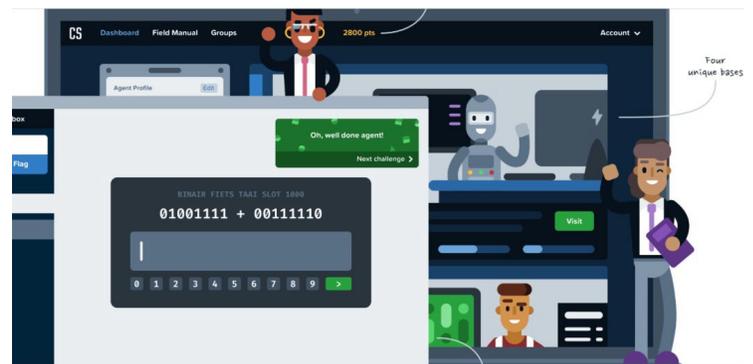
There were 82 semi-finalists, of which 4 of those students became finalists and 9 students earned the scholar level. The 9 students each received a $2,500 scholarship for the U.S. college of their choice. For a full list of the winners and their schools, visit winners

ENHANCE THE VALUE OF STATE DATA

Maximize the value of State data by designing, implementing and governing State systems for data stewardship, sharing and public use.

Pursuant to HRS sections 27-43 and 27-44, Open Data, an IT Strategic Plan priority area, includes building on established data and transparency platforms to facilitate open data.

ADVOCACY

- ETS continues to advocate with the Governor and Legislature for the establishment of a Chief Data Officer and supporting subject matter experts to allow the state and others to use data to make more informed data-based decisions and to better govern the state's data.

OPEN DATA PORTAL

- Visitors to the state Open Data Portal will find datasets organized by six major topics: culture and recreation, economic development, employment, environmental protection, formal education, and government-wide support.

- ETS continues to finalize our financial transparency data to provide up-to-date State budget and expenditure information to our constituents and civic entities.
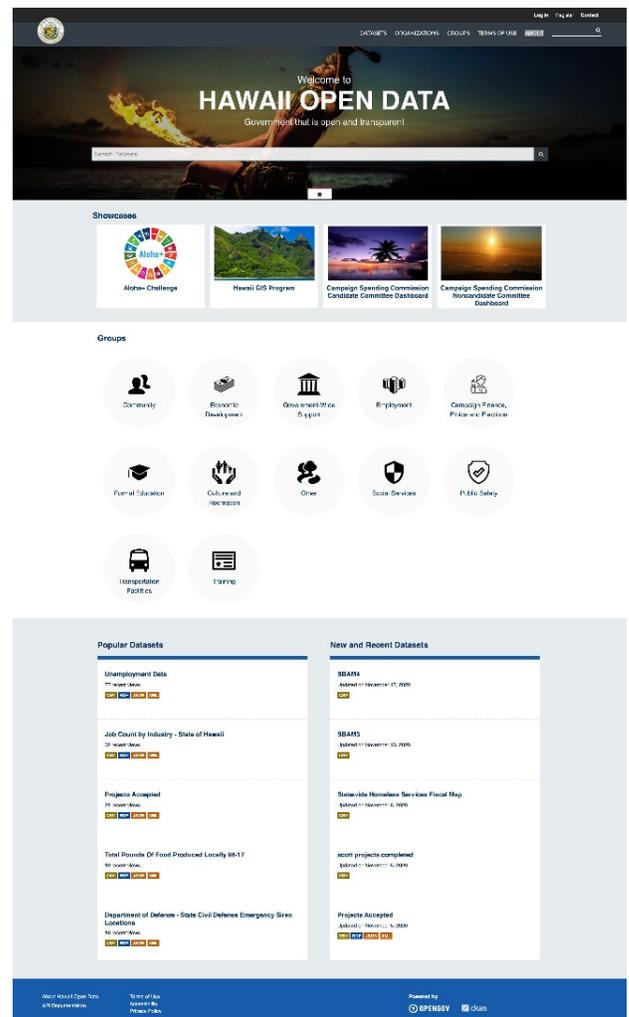
ENHANCE THE VALUE OF STATE DATA

▪ ETS facilitates executive branch departments' efforts to make appropriate and existing electronic data sets electronically available to the public through opendata.hawaii.gov, which now offers charting libraries and mapping tools for the creation of dynamic visualizations.

▪ More than 1000 data sets are publicly available through the portal, providing residents, analysts, and civic developers with self-service access to state data

▪ Last year, there were more than 100K browser page views.

ALOHA+ CHALLENGE DASHBOARD

▪ The Office of Enterprise Technology Services supports the Aloha+ Challenge Dashboard through a State partnership with Hawaii Green Growth by providing website hosting services and ESRI license.

▪ The Aloha+ Dashboard was recently rebranded and now leverages ESRI as a platform. The online open data platform tracks progress, provides accountability, and ensures transparency on the Aloha+ Challenge.

▪ The Aloha+ Challenge Dashboard is designed for decision makers, practitioners, and the public to inform policy, data driven decision making, and inspire action on Hawaii's statewide 2030 sustainability goals.

OPTIMIZE ENTERPRISE SYSTEMS

Optimize ETS enterprise systems to leverage the State's investment in centralized IT services.

The following programs align with the strategic focus area of Optimize Enterprise Systems and also the area of Implement Dynamic and Sustainable IT Operations. Enterprise Programs and Projects consist of initiatives identified as enterprise in scope, leveraging economies of scale and setting standard platforms for IT systems to maximizing adoption and positive return on investment.

SHARED SERVICES (LEGACY)

ETS manages legacy enterprise shared services centrally to leverage economies of scale (e.g., mainframe, data center, and high-speed printing).

- **Shared Data Center –** ETS has three data centers: DR Fortress, University of Hawaii, and the Kalanimoku Building, for use by the departments.

- **Mainframe Services** – Having completed the migration of the mainframe disaster recovery site from UH Manoa to the mainland US, ETS continues to make progress migrating its primary mainframe from its current Honolulu location to a more hardened mainland site as well. This is expected to complete in early 2022. In tandem with this mainframe migration, ETS continues to seek ways to reduce paper printing on the large high-speed printers associated with the mainframe. ETS is working with all stakeholders impacted by these projects.

- **Mainframe Application Services** – ETS provides application services ranging from COBOL, ADABAS, Linux, and more, in support of various Mainframe applications.

OPTIMIZE ENTERPRISE SYSTEMS

- **Service Desk** - From responding to requests to unlock passwords to providing support for websites and applications, ETS' service desk provides executive branch departments with assistance.

- **High Speed Printing** – ETS maintains 2 redundant high-speed printers to provide for printing of state checks, accounting and financial records, forms and letters to beneficiaries of state and federal programs.

  Paper printing, pre-pandemic (prior to March 2020), had stabilized at a lower level after the first phase of the paper reduction project. And, in fact, there was a slight downward trend in paper printing in calendar year 2019.

  The 2020 pandemic, which caused a large increase in Unemployment Insurance (UI) claims, caused a large increase in printing claimant letters related to eligibility and payment as well as letters to employers. Overall printing increased 44% in 2020 (compared to 2019).

  At the time of this writing, ETS has paper printing data through September 2021. Comparing the 9-month periods of January through September for 2019, 2020, and 2021, there was a 42% increase in 2020 compared to 2019 and a 34% increase in 2021 (again compared to 2019).

Number of cases of paper printed by Year/Month

1 case = 5000 pages

Month	2019	2020	2021
January	153	105	102
February	60	75	136
March	109	88	147
April	81	205	119
May	80	133	99
June	77	104	105
July	94	173	105
August	71	94	85
September	53	128	145
October	101	108	0
November	67	120	0
December	62	119	0

OPTIMIZE ENTERPRISE SYSTEMS

ETS responded to nearly 3,000 service requests in 2021. From responding to requests to unlock passwords to providing support for websites and applications, ETS' service desk provides executive branch departments with assistance.

Service Desk Requests by Department
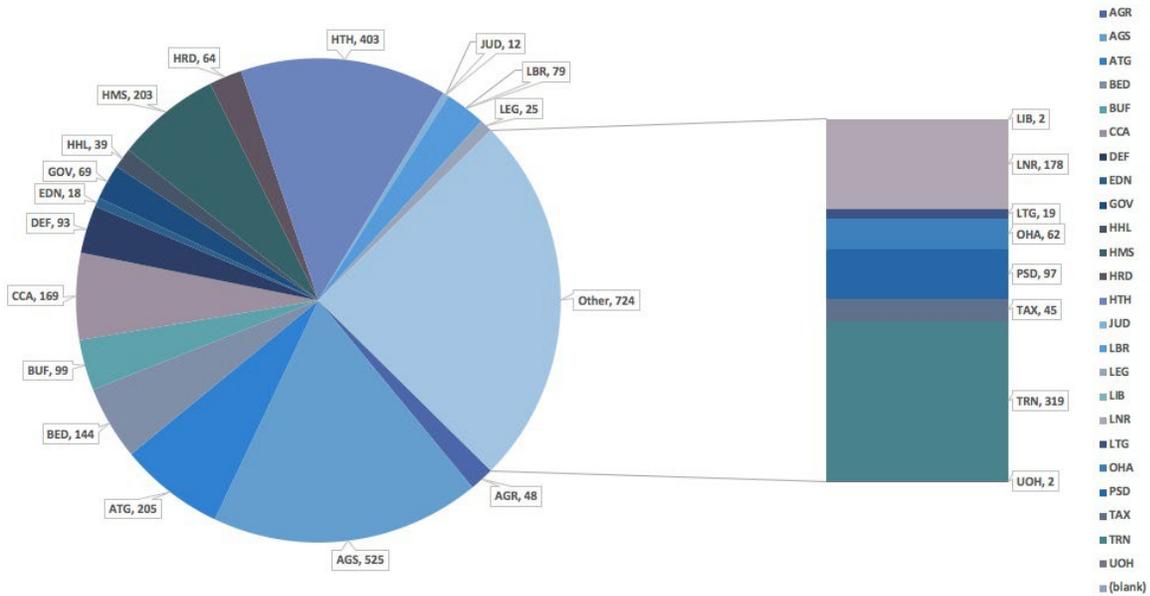
Service Desk Requests by Category
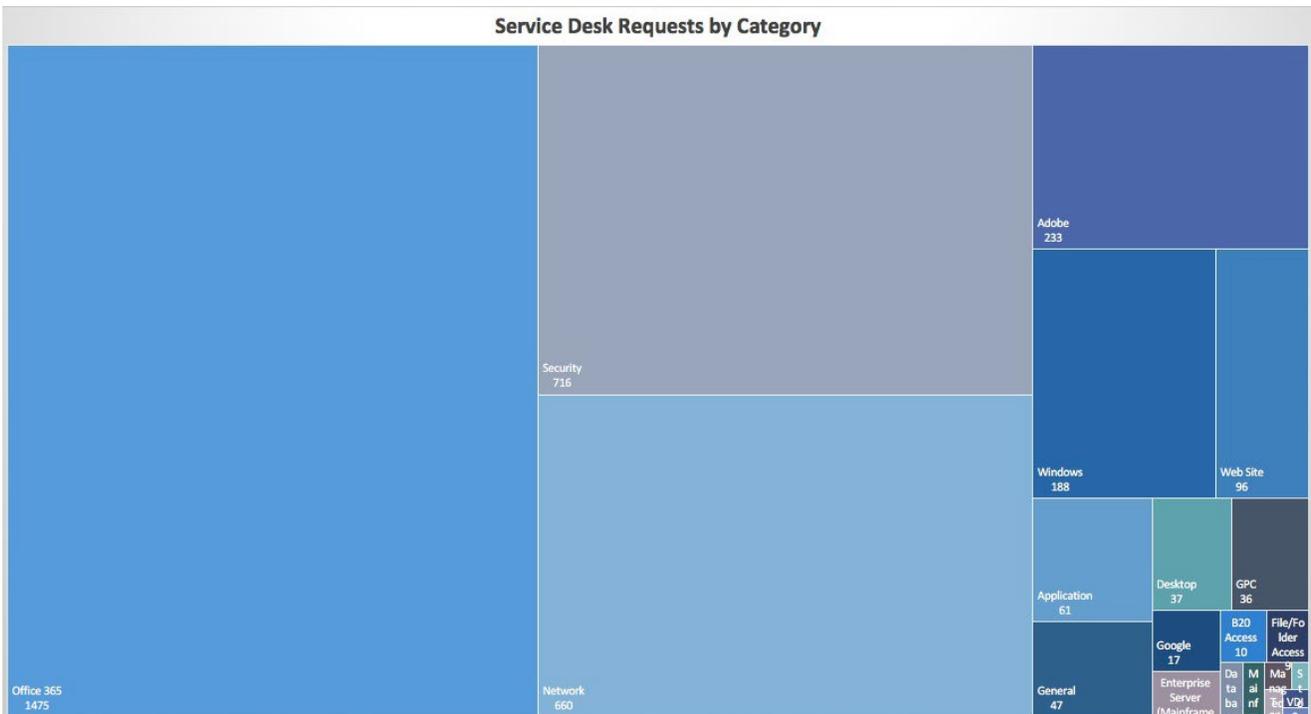
EXTEND IT PORTFOLIO GOVERNANCE

Extend the State IT Governance Model to better align the state's functions with resources and ensure the State follows industry best practices and garners the full benefits of its investments.

The following programs align with the strategic priority to Extend IT Portfolio Governance from the Hawaii Information Technology Strategic Plan. Success with this strategic priority necessitates excellent cooperation between ETS and the executive branch departments and agencies.

IT PROJECT GOVERNANCE

ETS provides IT governance (ITG) for Executive Branch projects under Administrative Directive No. 18-03 Program Governance and IV&V Requirements for Enterprise IT Projects.

Information technology governance consists of processes and standards guiding the management and oversight of the State of Hawaii's IT and information resource investments, acquisitions and projects, seeking efficiencies and cost-savings through economies of scale, leveraging of shared assets, reduction of waste, and alignment with statewide IT strategies and industry best practices. This includes the implementation of governance and monitoring procedures across enterprise programs and projects to ensure successful outcomes and positive return on investment (ROI) are achieved, to the extent possible, and the efficient management of the statewide portfolio to ensure projects are prioritized appropriately and resources are sufficiently managed.

During 2021, ETS streamlined the IT Spend Request process by retiring a decades old paper form that was used to initiate the request approval process. Duplicate data entry was thus eliminated and the statewide IT portfolio tool is now used directly to capture the IT demand management starting from roadmapping and proceeding via appropriate approvals all the way to project completion.

EXTEND IT PORTFOLIO GOVERNANCE
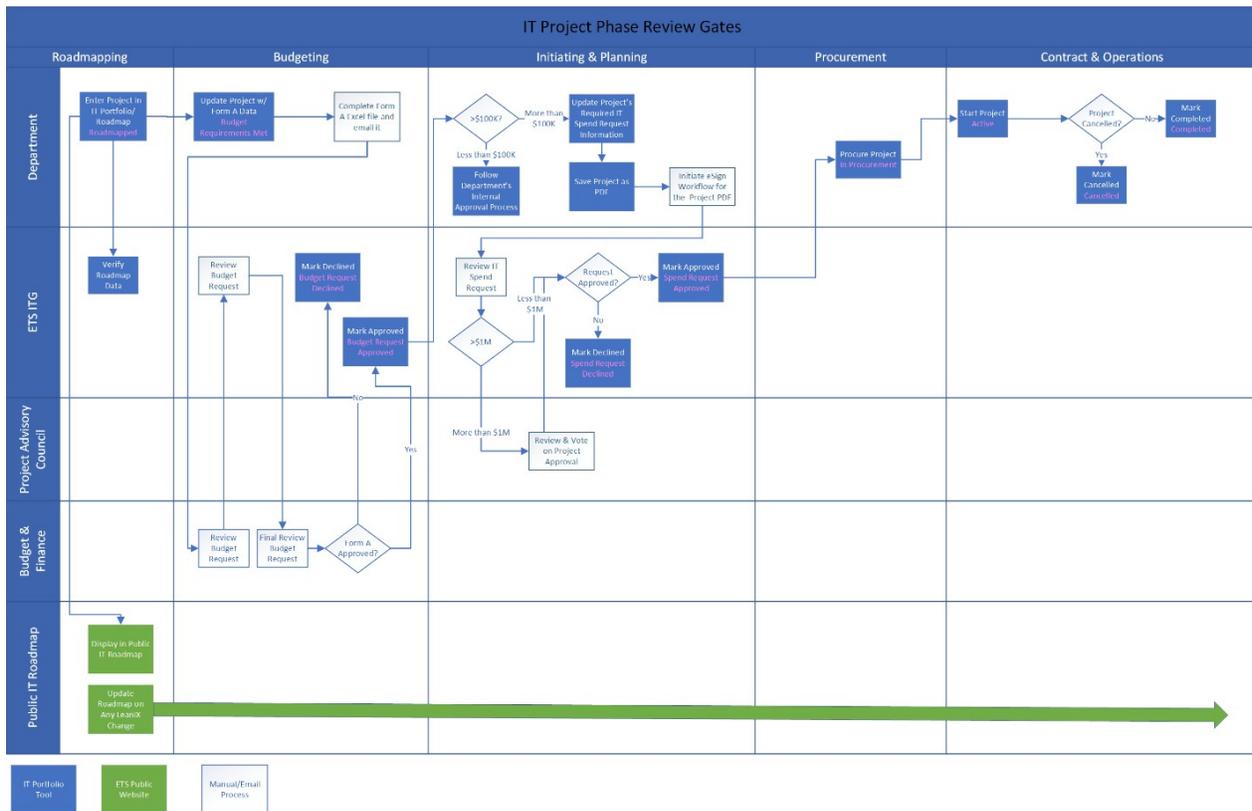
1. Roadmapping Phase – ITG reviews each department's IT roadmap periodically together with the department and the CIO.
2. Budgeting Phase – ITG coordinates with the Department of Budget & Finance on a yearly CIO evaluation of all executive branch IT budget requests.
3. Initiating Phase – For any IT spending costing over $100,000, departments submit IT Spend Requests to ITG. ITG coordinates a CIO review of all these IT Spend Requests.
4. Planning Phase – For any IT spending costing over $1 million, ITG coordinates a review and approval of the spend request with the Project Advisory Council (PAC).
5. Procurement Phase – CIO must approve all IT procurement solicitations and procurement contracts over $100,000.
6. Contract and Operations Phase – ITG coordinates periodic reviews of active IT projects.

EXTEND IT PORTFOLIO GOVERNANCE

IT Requests for 2021
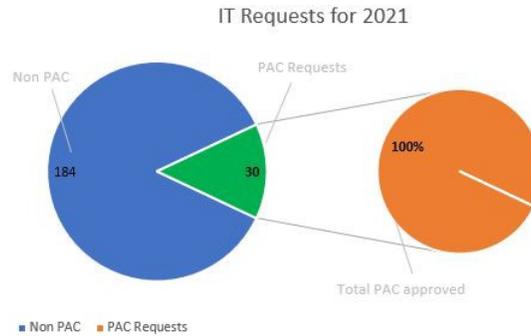
HAWAII DEPARTMENTAL IT ROADMAP DASHBOARD

The departmental IT roadmap and portfolio management effort continues to inform the statewide IT spending prioritization and architectural modernization. During the monthly roadmap meetings between department IT staff and ETS, and with the help of the LeanIX portfolio management tool, ETS worked together with the departments to assess capabilities, criticality and both business and technical fit of the state's existing IT applications. This assessment yields a summary roadmap disposition called TIME for each IT application. TIME translates to whether to Tolerate, Invest in, Migrate or Eliminate each application.

EXTEND IT PORTFOLIO GOVERNANCE

HAWAII PUBLIC IT ROADMAP DASHBOARD

ETS expanded transparency of the departmental IT roadmap and portfolio management by establishing a public STATE OF HAWAII IT PORTFOLIO AND ROADMAP, available to the public on the ETS website at https://ets.hawaii.gov/state-of-hawaii-it-portfolio-management/.

Application Hosting Approach

Hosting Approach for Roadmapped Applications

Hosting Approach	Value
@On Premise	233
Co-Located	76
(missing data)	91
SaaS	60
IaaS	20
PaaS	21
TBD - Future	10
Hosted	9

Application Redundancy by Business Capability
Note: You can drill down on any row to view the applications (click a capability and right-click to drill down)

Business Capability	Applications Serving This Capability ▾
Government Wide Support / Financial Management / Accounting	23
Department Budget Areas / Transportation / Transportation Delivery	19
Department Budget Areas / Individual Rights / Business Practices Enforcement	15
Government Wide Support / Information Technology / Document Management	15
Department Budget Areas / Individual Rights / Licensing/Permitting	14
Department Budget Areas / Transportation / Transportation Operations	13
Government Wide Support / Financial Management / Financial Reporting	12
Government Wide Support / Information Technology / Enterprise Applications	11
Government Wide Support / Human Resources	11
Government Wide Support / Financial Management / Budgeting	10
Government Wide Support / Information Technology / Security	10
Department Budget Areas / Health / Environmental Management and Health Services	10
Government Wide Support / Financial Management / Financing	9
Department Budget Areas / Public Safety	9
Department Budget Areas / Health / Family Health Services	8
Department Budget Areas / Transportation	8
Department Budget Areas / Health / Disease Outbreak Surveillance	7
Government Wide Support / Policy Development	7
Department Budget Areas / Health / Physical Health - Case Management	7
Government Wide Support / Financial Management / Comprehensive or Multi-Purpose ...	7

EXTEND IT PORTFOLIO GOVERNANCE

INDEPENDENT VERIFICATION AND VALIDATION REPORTS

Pursuant to section 27.43.6, HRS, and section 93-16, HRS, Independent Verification and Validation (IV&V) Reports for certain major systems are to be submitted to the legislature and posted on the ETS website.

IV&V provides a rigorous independent process that evaluates the correctness and quality of the business product of the project to ensure that the product is being developed in accordance with customer requirements and is well-engineered.

In 2021, ETS provided IV&V oversight over the following projects:

- Department of Health's Behavioral Health Administration Integrated Case Management System,
- Public Utilities Commission's Case & Document Management System
- Department of Human Services' Systems Modernization project,
- Department of Labor and Industrial Relations, Disability Compensation Division's Modernization Project,
- Department of Labor and Industrial Relations, Unemployment Insurance Modernization Project,
- Employer-Union Health Benefits Trust Fund's Benefits Administration System, and
- Department of Education's Financial Management System Modernization project.
- Department of Transportation's Financial Management Systems Project

IMPLEMENT DYNAMIC AND SUSTAINABLE IT OPERATIONS

(Also known as Evergreen Operations) Implement dynamic and sustainable IT operations to ensure business systems are up-to-date and ready to support the current and future needs of business users and citizens at all times.

The following programs align with the key focus area of Dynamic and Sustainable IT Operations, which is one of the strategic priorities of the Hawaii Information Technology Strategic Plan.

SHARED SERVICES

ETS manages enterprise shared services centrally to leverage economies of scale (e.g., network, data management, unified communications, data center, and various cloud services).

- **Office 365** – Activated 12,390 Office 365 licenses that are now being utilized by branch department users. Benefits include fortified security, greater disaster recovery capability, expanded applications and services, added tools for collaboration, and long-term budget sustainability. A dramatic increase of Microsoft SharePoint storage was driven in response to the pandemic and increase in telework: 1.8TB (terabytes) of SharePoint storage was in use shortly before widespread awareness of COVID-19 in March. By the end of October, 12.99TB of SharePoint storage was in use – a more than seven-fold increase in less than a year. It should be noted that most of this increase occurred shortly after teleworking became the norm, then storage use went from 1.8TB to 9TB in one month.

- **eSign Service** – Departments statewide increased government efficiency within the executive branch through the use of eSign. Nearly 570,000 transactions were processed through the Adobe eSign service this year. The COVID-19 pandemic coerced the digitalization of many services and had accelerated the use of electronic signatures. In March 2021, ETS leveraged our eSign service in an integration with the State of Hawaii Safe Travels application for the digital signing of the Order for Self-Quarantine. In the first month of the integration, our number of eSign transactions increased by 55%.

- **Adobe Creative Cloud** – Departments statewide have access to the Adobe products suite to create PDFs, and other digital media and assets.

EVERGREEN OPERATIONS

SHARED SERVICES (CONTINUED)

- **Government Private Cloud** – ETS is a VMware Service Provider and provides Hyper Converged Infrastructure and services to various departments.

- **Public Cloud Services** – ETS provides Amazon Web Services (AWS), Microsoft Azure, and Google Cloud services to various applications, and services.

- **Open Data Infrastructure** – The State's Open Data Infrastructure is managed and maintained by ETS.

- **Public Facing Website Infrastructure** – Various department and agency websites are housed and managed by ETS in AWS.

- **Network Services** – ETS has designed and maintains the largest computer network in the State of Hawaii that spans multiple islands.

- **HIWIN Radio System** – The Hawaii Wireless Interoperability Network is the State's Radio infrastructure, which is used by first responders, departments, counties, and other various agencies.

- **Executive Legislative Tracker (ELT)** – Using Sharepoint, SQL Server and PowerApps, ETS designed a way for departments to search for and track measures during the Legislative Session. Departments collaborate and discuss proposed measures using this tool. Technical aspects of the application read the information on the capitol.hawaii.gov site and updates the tracker in near real time, store documents that are associated with a specific measure and has functions to send email from the application. The ELT has been in use for five years with additional functionality added every year. For the 2021 Legislative Session, the application garnered 468 users.

- **Executive Testimony Tracker (ETT) –** Using Sharepoint, ETT provides the executive branch departments a tool to submit and collaborate on testimonies during the Legislative Session. Submitting the testimony is automated through an email with an attachment. The system also organizes the testimonies for the executive department. For the 2021 legislative session, 1578 testimonies were submitted

EVERGREEN OPERATIONS

- Legislative Bill Enrollment - To increase the efficiency and organization of the legislative bill enrollment process, the ETS team developed the Bill Enrollment system for the Office of the Governor in April 2021. The system streamlines the gathering of comments and recommendations from the Departments/Attached Agencies, and handles the communications and transfer of documents between the parties. For the 2021 Legislative Session, 252 bills were processed for comments and recommendations to the executive branches.

eSIGN

Five years after eSign was officially launched, nearly 1.8 million eSign transactions have occurred. From onboarding new employees, to signing documents, 19 state departments are using eSign.
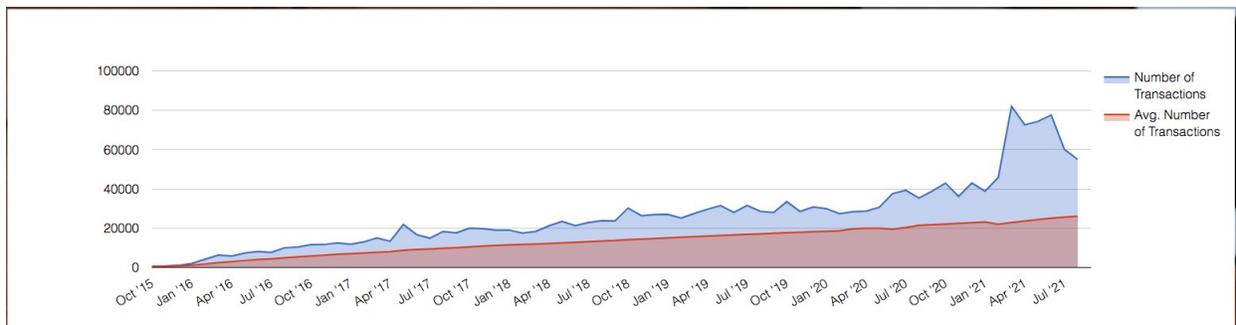
The application creates efficiency within state government through digitizing paper-based processes and reduces environmental impact by saving more than 61-thousand pounds of wood, 177-thousand gallons of water and nine-thousand pounds of waste.

173740000	605699	9581140
Gallons of Water Saved	Pounds of waste saved	Pounds of wood saved

EVERGREEN OPERATIONS

OFFICE 365

ETS manages 14,575 Office 365 licenses that are now being utilized by executive branch department users.

- Licenses include applications: Microsoft Teams, One Drive, Skype, and Sharepoint

- Activated benefits include fortified security, greater disaster recovery capability, expanded applications and services, added tools for collaboration, and long-term budget sustainability.

WEB SERVICES

- ETS manages the infrastructure that hosts the State's public facing websites, which includes 570 sites (department websites and its subsites) and provides other cloud hosting options.

SALESFORCE

- ETS supports the application, which HiMod's payroll call center, Hawaii Information Portal (HIP), uses as its customer relationship manager.

- An average of 4,500 employees use the HIP call center.

BRANDWATCH

ETS is working with social media management platforms, such as Brandwatch, to assist with content curation, monitoring and management, among other things. ETS assisted Hawaii County in using the tools during its disaster and volcano recovery. The tools are used to track social media content and help in the creation of communication strategies and correct misinformation.

EVERGREEN OPERATIONS

HAWAII WIRELESS INTEROPERABILITY NETWORK (HiWIN)

ETS manages the State's radio system, which is used by first responders, federal, state and county other agencies. It is a system architected in such a way that if any portion of the system isolated, it will continue to operate with the full functionality of the system at-large. Backed by the State of Hawaii microwave network of links, the system joins sites that are designed to survive a category 4 hurricane.

HiWIN By The Numbers

o 44 radio sites serve various federal agencies, County of Kauai, Kauai Island Utility Cooperative, City & County of Honolulu, Hawaii Emergency Management Agency, University of Hawaii, U.S. Coast Guard, County of Maui, County of Hawaii, U.S. Army Pacific Land Mobile Radio, and national parks.

o 26 of the 46 radio sites are managed by ETS.

o 20 of the 46 radio sites are managed by ETS Partners including City and County of Honolulu, County of Maui, County of Hawaii, and U.S. Coast Guard.

o Serves the communication needs of all airports statewide.

Roughly 31 agencies statewide use HiWIN, with more than 3300 users:

Subscribers By Jurisdictions, 2666 Total

Local Subscribers, 139
BeOn Subscribers, 133
Federal Subscribers, 205
State Subscribers, 2189

■ State Subscribers ■ Federal Subscribers ■ Local Subscribers ■ BeOn Subscribers

EVERGREEN OPERATIONS

ANUENUE Interisland Digital Microwave Partnership

Radio Section System Status & Plans

Current Efforts and Future Plans

MOUs augment the system through partnerships without cost.

Interface with NGN for alternate State backhaul.

Newly installed / transitioned **Ethernet Links**

Newly established redundant **Fiber** connections.

Upgrade to LMR system increasing capacity.

New LMR sites covering new areas shown as gray.

Original System Components

HAWAIIAN and Anuenue SONET System Links

The State maintains a vast network of resilient radio sites that are linked by microwave connections. The network consists of State sites as well as USCG sites, designed to meet the unique topography and climate challenges of the Hawaiian Islands, Anuenue's backhaul infrastructure can withstand the 155 mph winds of a Category 4 hurricane, run for one to two weeks on generators without commercial power, and survive in earthquake Zone 4-rated facilities built far away from tsunami inundation zones.

The partnership between the State with the USCG, known as Anuenue, provides resilient and survivable communication throughout Hawaii. It is similar to other partnerships penned by ETS to share sites with counties thereby advancing connectivity without the cost of a new site build.

While the partnerships and overall network of microwave sites and links have also been designed to support all State Office Buildings to provide connectivity and continuity of government functions, if terrestrial connections such as fiber optic cables are cut or damaged, the foremost important role is to support the HIWIN network (discussed above) for First Responders and those supporting them serving in the broader public safety arena.

EVERGREEN OPERATIONS

The ANUENUE Network infrastructure of high-capacity microwave links, radio towers, and ground facilities support systems used by Hawaii's first responders, search and rescue, law enforcement, emergency services, and critical government services during both routine operations and during natural disasters like hurricanes and tsunamis. The ANUENUE's 12 "high sites", located on remote mountain tops, connect with eight sites located at state office buildings and USCG properties across the islands.

State users of the ANUENUE include ETS, with the Hawaii Wireless Interoperability Network (HIWIN); Maritime Wireless Network System; Hawai'i Emergency Management Agency; the Departments of Public Safety, Transportation, Health, and Land and Natural Resources; and the County of Maui Police Department and other agencies of all counties. The Coast Guard's primary use of the ANUENUE is its Rescue 21 maritime distress radio system, providing significantly improved coverage and location capabilities to locate mariners in distress. USCG-sponsored federal users include the U.S. Army Pacific Land MobileRadio System, National Oceanic and Atmospheric Administration Emergency Weather Broadcast System, U.S. Customs and Border Protection, and United States Geological Service.

EVERGREEN OPERATIONS

ANUENUE Interisland Digital Microwave Partnership (Continued)

ETS has recently partnered with DOT Airports to apply the vast technical capabilities of the HIWIN system connected by the microwave network to offer interoperable communication platform for all agencies likely to respond to an emergency at any airport statewide. This includes county, state, and federal agencies representing law enforcement as well as Fire, EMS, and other public safety functions. All harbors statewide use HIWIN and are connected over the microwave system, enabling instant statewide communications for almost any emergency.

Enterprise Notification System (ENS) using Alert Media

ETS procured 10,000 licenses of the Alert Media services to create an Enterprise Notification System (ENS) for participating Executive Branch Agencies' staff. The ENS gives the State mass notification capabilities using voice call, text message, email, or mobile app push notification. Outgoing notifications can target by organizational entities, specific geographic locations, as well as other kinds of categorizations. It is also possible for individuals to issue a request for assistance. The ENS is functionally deployed by three agencies now with twelve other agencies in various states of deployment.

EVERGREEN OPERATIONS

WEB ACCESSIBILITY

Web accessibility is measured using the globally recognized Web Content Accessibility Guidelines (WCAG) 2.0 level AA standards, which defines how to make web content more accessible for people with disabilities. 106K pages across 123 web sites are being actively scanned and monitored.

In March 2021, ETS hosted a training for state users with Siteimprove instructors to introduce new platform features and to review dashboarding, reporting, and policy creation.

GEOGRAPHIC INFORMATION SYSTEM PROGRAM
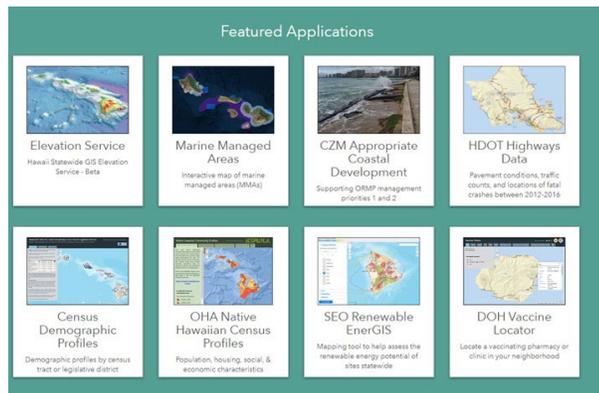
- The GIS Program is an Office of Enterprise Technology Services and Office of Planning joint effort.

- Approximately 700 active users in State's primary Cloud mapping organization.

- Established enterprise licensing agreements and cloud-based hosting services that encourages broad GIS adoption across all State of Hawaii departments.

- Reduces redundant local databases, standardizes information analyzed by decision makers.

- Collects and distributes up-to-date authoritative GIS data to more than 600 state GIS data and system users state departments that develop and maintain a wide variety of data, maps and ERP applications — many of which are available to the public and/or relied upon by state personnel.

EVERGREEN OPERATIONS

GOVERNMENT PRIVATE CLOUD

ETS is a VMware Service Provider and provides Hyper Converged Infrastructure and services to various departments.

CAPACITY REPORT - DATASTORES

Year	Terabytes Used
Sep-19	178.22
Sep-20	208.62
Sep-21	230

UTILIZATION REPORT - VIRTUAL MACHINES

Year	Virtual Machines
Sep-19	555
Sep-20	539
Sep-21	531
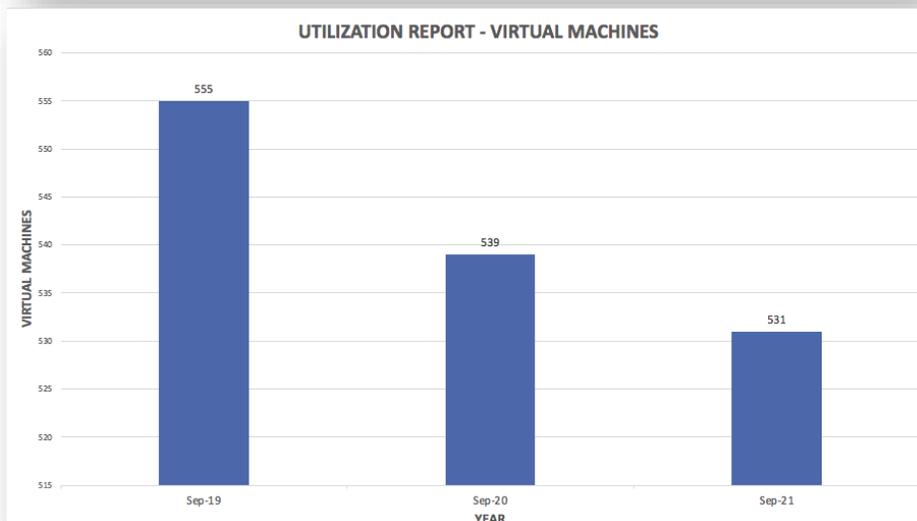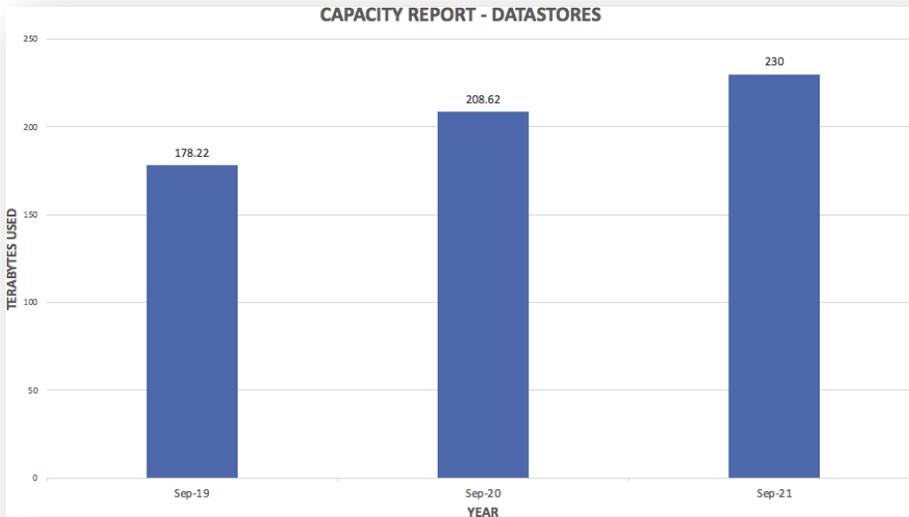
PUBLIC CLOUD SERVICES

ETS provides Amazon Web Services (AWS), Microsoft Azure, and Google Cloud services as infrastructure to host various applications, and services.

DIGITAL WORKFORCE DEVELOPMENT

Establish a continuous learning culture and growth mindset to modernize how we work and enable the state to develop and sustain the digital workforce needed in a constantly evolving IT world.

PROFESSIONAL DEVELOPMENT

ETS provides employees with linear learning (learning a complete process, programming language, or system from A to Z) and flow learning (learning about a narrow topic to solve a work-related problem or improve knowledge in a specific area).

InfoTech Academy

InfoTech Academy has a series of 45 online courses designed to help the IT leadership team master the core IT processes from the IT Management & Governance framework. Completion of a set of courses in any of the 9 major areas leads to a certificate.

In 2021, ETS staff continued to participate in guided Implementations and virtual Workshops covering various subjects.

DIGITAL WORKFORCE DEVELOPMENT

Vendor Sponsored Training. ETS uses vendors to provide training on technologies used by the state. The training usually is a hands-on workshop on how to use a technology. Statewide trainings were offered on topics like productivity and collaboration, messaging and communications, web meetings, electronic signatures, accessibility, and telework. Statewide and focused trainings were offered by Microsoft, Adobe, OpenGov, and AlertMedia on topics like productivity and collaboration, messaging and communications, web meetings, electronic signatures, accessibility, open data, and telework.

CERTIFICATIONS
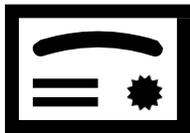
- Employees are encouraged to earn their certifications in the area of their profession.
- Provides an opportunity for our employees to submit for a salary increase because of their professional growth.
- If an employee passes their exam, they are reimbursed for the cost.

CAREER PATHS

- Many opportunities on a day-to-day basis for employees to grow, such as mentoring or shadowing opportunities, stretch assignments, and other learning opportunities throughout the organization.

WORKFORCE STATISTICS FOR CALENDAR YEAR 2021

- Employee Position Count – 150 (down from 181)
  - 58 Exempt
  - 92 Civil Service
- New positions authorized, to be established – 18 Exempt

DIGITAL WORKFORCE DEVELOPMENT

DIGITAL GOVERNMENT SUMMIT

The 2021 Hawaii Digital Government Summit, organized by Government Technology Magazine, is a collaborative forum to share information technology best practices, to hear about emerging technology trends, and to reflect on our future challenges.

This year, the Digital Summit shifted from an in-person event to a day of virtual sessions, due to the pandemic travel and gathering restrictions.

Recognized national speakers, Hawaii IT leaders, and colleagues from other states shared their collective experiences and proven problem-solving strategies. Topics included Transforming the Government Experience, Cloud Trends and Strategies, Navigating the Cyber Threat Landscape, The Post-Pandemic Workplace, and more. ETS, state departments, and other partners provided summit programming content.

This professional development and learning event drew more than 250 participants from alllevels of government in Hawaii.

DIGITAL WORKFORCE DEVELOPMENT

HAWAII ANNUAL CODE CHALLENGE (HACC)
Traditionally In-Person Event Pivots to Virtual Event In Response to COVID for the 2nd Year

Gov. David Ige's vision for the Hawaii Annual Code Challenge when it began in 2015 included providing an opportunity for civic engagement with the local technology community in modernizing state functions and services for a more effective, efficient and open government.

The HACC provides an expanded four-week timeframe meant to encourage interaction between community teams and state department personnel, ultimately resulting in sustainable solutions that are appropriately matched with technologies and platforms in use or being considered by the state. This event promotes the state as an innovative hub for future innovators.

1st Place Overall – Team HACCamino

THE TEAM: HACCamino

Anna Campainha
BS Computer Science
UHM '22

Daphne Marie Estacio
BS Computer Science
UHM '21

Jerome Gallego
BS Computer Science
UHM '22

Michael Gainey
BA Computer Science
UHM '21

Timothy Huo
BS Computer Science
UHM '23

HACCamino, a team from the University of Hawaiʻi, took home the top prize of $4,000 at the Hawaiʻi Annual Code Challenge's (HACC) Judging and Presentation Day, which was held over the weekend. HACCamino developed a proof-of-concept app to streamline data collection for marine animal sightings and reduce reporting errors in response to a challenge proposed by NIC Hawaii, in partnership with Hawaii Marine Animal Response (HMAR).

DIGITAL WORKFORCE DEVELOPMENT

HACC
HAWAI'I ANNUAL CODE CHALLENGE

1st Place High School Winner– Team MARS
Mililani High School

Mililani High School's team MARS took home the top high school category prize of $1,000 for its solution to the challenge proposed by NIC Hawaii and HMAR.

Waipahu High School's team MGK won $500 for second place for its solution to the challenge proposed by the Office of Hawaiian Affairs (OHA), which asked participants to create a chatbot to assist beneficiaries with obtaining important and accurate information relating to benefits.

MGK also took home the People's Choice Award.

2021 HACC BY THE NUMBERS

- **210 PARTICIPANTS**
- **44 TEAMS CREATED**
- **18 FINALIST TEAMS ON JUDGING DAY**

ANALYSIS OF FY2021 EXPENDITURES

This section analyzes ETS's expenditures by strategic priorities.

ETS EXPENDITURES BY STRATEGY
Total $30,394,579

- IT Governance $2,150,414 7%
- Legacy Operations $6,848,440 23%
- Workforce Development $250,112 1%
- CyberSecurity $2,875,343
- Partnering $4,533,926 15%
- Data Value $297,989 1%
- Evergreen Operations $13,438,355 44%

ANALYSIS OF FY2021 EXPENDITURES

Breakout of Evergreen Operations
Strategy: *Implement Dynamic and Sustainable IT Operations*
(Personnel Costs not included)

- ESRI GIS $754,974 7%
- Radio System $2,285,057 20%
- Adobe $611,634 5%
- Microsoft Unified Support $596,773 5%
- SalesForce $56,544 1%
- GPC $277,937 2%
- Hosting $45,593 0%
- Other $509,937 5%
- NGN: Next Generation Network $3,460,452 30%
- Office365 $2,886,249 25%

ANALYSIS OF FY2021 EXPENDITURES

PERSONNEL

PERSONNEL COSTS BY STRATEGY

- IT Governance, 1,836,139, 21%
- Evergreen Operations 1,953,205 22%
- Legacy Operations 2,642,214 30%
- Workforce Development 43,622 1%
- CyberSecurity 758,112 9%
- Partnering 1,448,628 16%
- Data Value 103,234 1%

ETS POSITIONS BY STRATEGY

- IT Governance 31 positions 19%
- Evergreen Operations 29 positions 17%
- Data Value 1 positions 1%
- Partnering 15 positions 9%
- CyberSecurity 8 positions 5%
- Workforce Development 2 positions 1%
- Legacy Operations 79 positions 48%