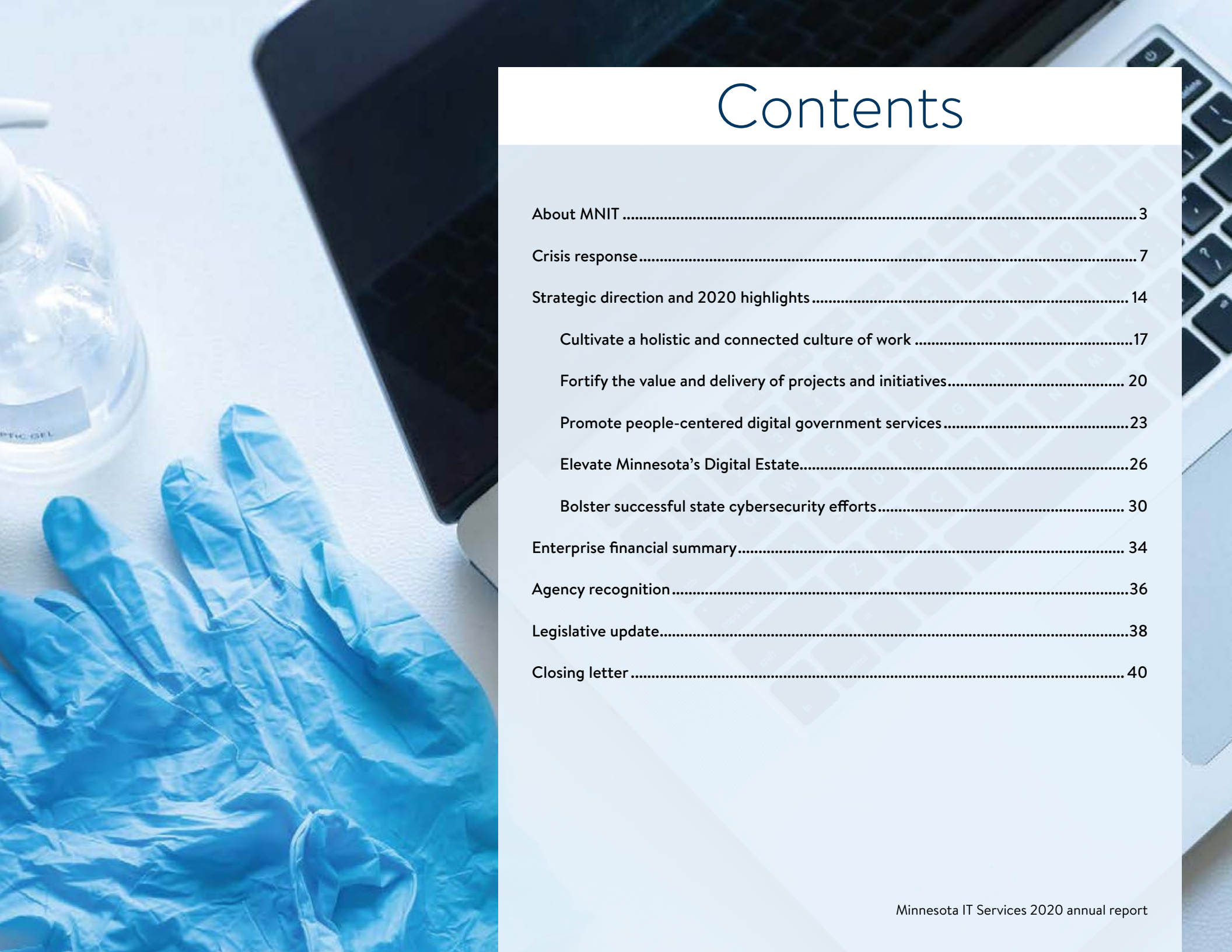
MINNESOTA IT SERVICES

2020 Annual Report

An innovative digital government that works for all



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Foreword

By MNIT Commissioner and State CIO Tarek Tomes

This year has been a remarkable one, and throughout these incredible times, we have found new ways to forge a clear and dedicated path forward. For Minnesota IT Services (MNIT), the twists and turns of the year showed the ways that state government can innovate to better serve Minnesotans. State technology stepped into a leadership role in a way that we haven't seen before — as a response to unprecedented needs and to help our state build a stronger future in a time of crisis.

In 2020, I saw countless examples of people creating new ways to deliver essential services across state government. On March 13, Governor Tim Walz issued Executive Order (EO) 20-01, declaring a peacetime emergency, and EO 20-20, directing Minnesotans to Stay at Home, creating an immediate need to transition to remote work to keep state employees safe and able to provide services that Minnesotans rely on.

Staff members from our networking and web teams jumped into action, adding monitoring and service capabilities to the Unemployment Insurance website and call center at the Department of Employment and Economic Development (DEED) to ensure benefits could be delivered as quickly as possible. When online meetings replaced conference room conversations almost overnight, Webex and Microsoft 365 experts at MNIT created a multi-disciplinary team to conduct more than 50 training sessions for over 7,854 people within six weeks, facilitating the rapid adoption of collaboration and conferencing tools that will be used long after we return to the workplace. MNIT's commitment to serving Minnesotans during the pandemic is also exemplified through the over 100 MNIT staff members that were deployed or reassigned to support critical divisions and agencies.

At MNIT, our work is connected to the services the state provides and to the people of Minnesota. We are not the same organization that we were at the start of 2020 – we have become even more nimble and agile. Our Connected Culture and innovative spirit supports and promotes a collaborative state government by empowering our state workforce with technology capabilities to best serve the state of Minnesota.

We witnessed, first-hand, the role that innovative technology and solutions play in supporting Minnesotans, and the need for digital government services and data-driven decisions will only grow in the years to come. The experiences of this year highlight the importance of being even more creative and resourceful to meet the evolving needs of our future workforce, the future of our economy, and the future of our state.

2020 by the numbers

2,400+
Employees

2,800+
Number of applications supported

339,381
Service desk tickets across the executive branch

186,361
Tickets resolved the same day (54.9%)

220+
Number of websites we host and support

415
Total projects tracked

81
Total projects started

2,832
Number of security incidents resolved

4,476
Purchase request volume

114
People who took the public Accessible Word training course in 2020

1,676
People who took the public Accessible Word training course since its launch

20
Number of geospatial projects supported and hosted

897
Total resources on the Minnesota Geospatial Commons

98,374,608
Number of hits on the geospatial image server

1,900
Average monthly conversations in COVID-19 chatbot

About MNIT

For the last nine years, technologists across the executive branch have laid the foundation for our vision: an innovative digital government that works for all Minnesotans.

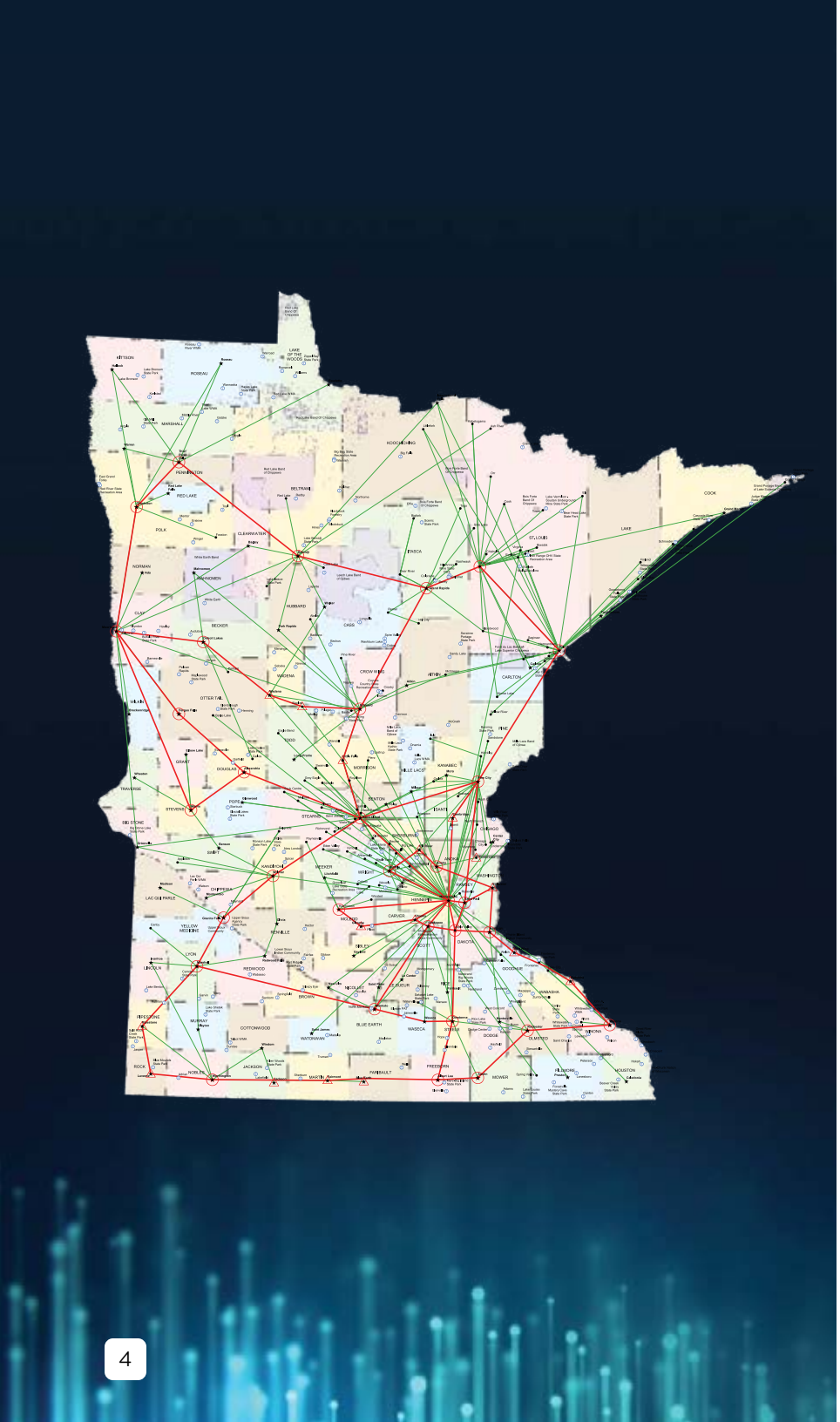
Minnesota IT Services (MNIT) is the information technology agency for Minnesota's executive branch. Led by the state's Chief Information Officer, MNIT sets IT strategy, direction, policies, and standards for enterprise IT leadership and planning. We partner to deliver secure, reliable technology solutions to improve the lives of all Minnesotans.

MNIT delivers enterprise and local technology solutions for Minnesota government that transform how more than 70 state agencies, boards, councils, and commissions bring services to the people of Minnesota. We also serve local and tribal governments, educational institutions from K-12 to higher education, and some nonprofits.

The agency delivers IT services through a hybrid model of service delivery. Services that are unique to a specific partner are delivered locally by MNIT's Chief Business Technology Officers and their dedicated teams.

Services that maximize efficiencies and reduce cost are delivered as enterprise services. Enterprise services include tools like email, desktop support, and telephone services. MNIT charges rates for these enterprise services and makes all IT-related expenditures on behalf of Minnesota's executive branch agencies.

Photo
MNIT staff setting up WiFi for a community COVID-19 testing site.



Minnesota's Network for Enterprise Technology (MNET)

MNIT manages Minnesota's Network for Enterprise Technology (MNET), the statewide network that gives Minnesotans access to modern digital technologies and government services that are meaningful, timely, and cost-effective. MNET connects all 87 counties, 300 cities, public safety, health care, Minnesota's tribal nations, K-12, education consortiums, and 200 public education and higher education campuses including the University of Minnesota and Minnesota State Colleges and Universities. This network provides broad visibility into cyber activity occurring across the state.

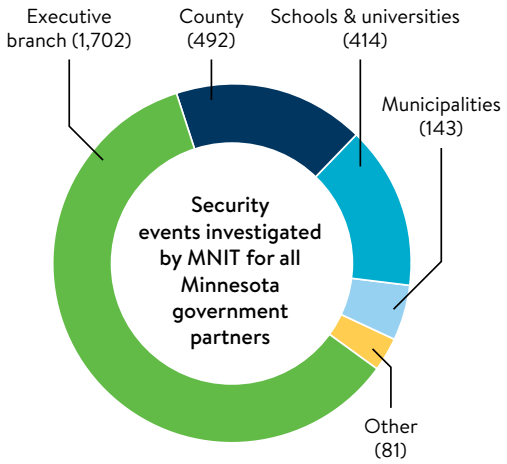
Project management office

In 2020, MNIT's Project Management Office (PMO) tracked the completion of 63 projects across nine executive branch agencies, boards, commissions, and councils. These projects range from public-facing applications to internal-facing IT infrastructure endeavors.

Security

Cybersecurity is a critical function of Minnesota IT Services. We are constantly monitoring and responding to potential threats 24/7 to make sure Minnesotans can access the critical services that they rely upon. To keep state government running, we must continually work to proactively prepare for new threats by securing Minnesota's IT systems. In 2020, our Security Operations Center (SOC) detected or received reports of 2,832 cyber incidents.

Security events investigated by MNIT for all Minnesota Government partners



Security Incidents

Type of Incident	2020 total
Social Engineering	105
Malware	1,035
Forensic Investigation	385
Network Attack/Scan	192
Copyright Violation	31
Unauthorized Access attempt	580
Unauthorized Access	19
Unauthorized disclosure	11
Policy Violation	70
Inappropriate Use	12
Lost/Stolen Devices	18
Denial of Service	52
Other	322
Total incidents	2,832

Procurement

The Procurement Division is responsible for processing requests to purchase everything from IT hardware, software, and mobile devices – including bringing in contractors to assist with projects.

Geospatial Information Office

The Minnesota Geospatial Information Office coordinates geographic information systems (GIS) within the state, creating connections between state agencies and other stakeholders from government and nongovernment organizations. The Geospatial Information team manages the Minnesota Geospatial Commons, a collaborative public website where publishers can share, and users can access geospatial resources – data, maps, services and applications.

Office of Accessibility

Minnesota IT Services' Office of Accessibility oversees the implementation of accessibility standards for Minnesota's executive branch to provide resources that ensure applications, websites, and documents are accessible for everyone.

Service desk

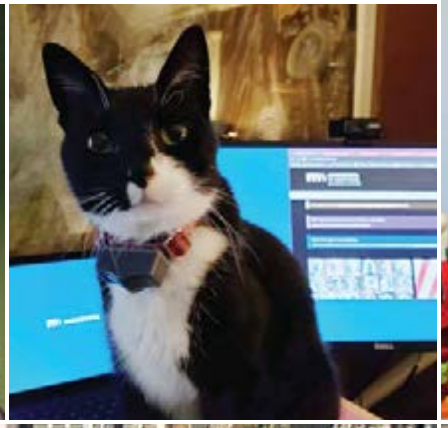
Our enterprise service desk provides 24/7 IT support and services for Minnesota state government: executive branch agencies, boards, councils, and commissions; non-executive branch customers, education, tribal governments, non-profits; and MNIT staff.



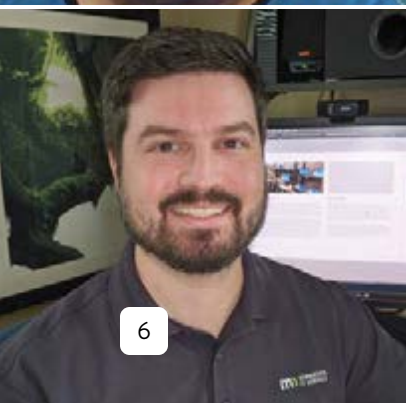












Crisis response

In 2020, Minnesota faced an unprecedented public health emergency that created economic uncertainty and restraints on physical movements and business operations intended to curb the spread of the COVID-19 virus. Everyone learned how to work and live in new ways, and Minnesota's government was no exception. The services that state agencies provide are critical for Minnesotans, especially during a public crisis. Minnesota IT Services worked around the clock to provide Minnesotans with access to critical services and to activate teleworking capabilities for state employees.

Supporting a remote workforce

Following Executive Order 20-01 and subsequent stay at home orders, MNIT supported the state's workforce as 63% employees moved to telework. MNIT quickly identified the telework personas and bolstered state system access needs while navigating supply chain constraints created by the pandemic. This transition allowed us to advance adoption of telework and collaboration tool efforts ahead by years. Since the start of the pandemic, over 90% of MNIT staff work remotely on any given day, continuing to deliver IT services and support that our business partners need.

Collaboration tools/training

The adoption of modern teleconferencing capabilities reflected the rapid shift to remote work. From March 16 to April 6, the total number of unique users of Microsoft Teams across Minnesota's executive branch increased by 81%, and had a 580% growth in interactions (calls, meetings, and chats). There were days where state employees sent over 165,000 instant messages.

MNIT led the implementation of large-audience virtual live events. Because our staff are spread across 90 physical locations, digital town halls were already a critical component to all-staff communication. This became even more important as nearly all our staff began working remotely. As the largescale expansion of telework at the state progressed during COVID-19, MNIT made strides in remote employee engagement. With the recent adoption of a live event tool in March, we dramatically increased participation in all staff events from 600 employees in March to 1,580 employees in April.

Equipment

Hardware support and delivery were a priority for our service delivery teams. In less than two weeks, MNIT configured and deployed 1,000 laptops to enable state staff to work remotely, as well as 10,000 small home routers to enable remote call center agents. Our teams established connections through cellular carrier hotspots, wireless desktop cards, and extended network cables.

MNIT's enterprise service workstation deployment team evaluated how to replace computers safely knowing that many people would be working from home for the foreseeable future – so we turned to curbside pickup. Following a pilot deployment with the Department of Employment and Economic Development's Vocational Rehab Services, MNIT now has the capacity to deploy about 30 computers per day, complete with newly-created instructions to provide streamlined hardware support and setup. Curbside pickups are pre-arranged by appointment and follow strict guidelines to limit physical interactions to help protect everyone.

Service desk

Real-time collaboration was critical to MNIT's COVID-19 response. MNIT quickly pulled together teams from across the agency to ensure that state employees had access to hardware, software, collaboration tools, video and phone conferencing services, and customer service. When service desk staff saw calls increasing exponentially as more employees worked from home, we quickly shifted employees within MNIT to increase service desk staff by 30 full-time employees (100% increase) to better meet the needs of state employees.

Strategically deploying emerging technology, MNIT implemented robotics process automation and a voice-assisted chat bot to ensure that state employees' teleworking needs were addressed. These technologies answered questions without human interaction and reduced caller wait times.

Procurement

MNIT's Procurement Division quickly stepped into gear, purchasing hardware, software, and contracts to ensure that state employees could work effectively from home. Even before the first COVID-19 case was confirmed in Minnesota, MNIT Procurement worked with vendors, the Department of Administration, and leaders at state agencies to sustain the state's capacity to respond to the pandemic and maintain critical state services. With several dozen emergency procurement authorizations for technology, the team worked around severe supply chain constraint: whether it was finding new vendors, shifting existing equipment (hardware, laptops, etc.) to meet the needs of newly remote workers, or communicating with current contractors about new policies.

Security

A data-driven approach was key to successfully helping state employees telework. Metrics allowed MNIT to understand where the agency needed to shift attention, direct actions, and to get ahead of service impacts. One critical need was Virtual Private Networks (VPNs), which allow staff to connect securely to state systems and information. Once the security team understood the volume needed within the early days of the response, they projected the need for all of state government. In early March, MNIT increased capacity from supporting 10,000 people connecting through VPN, to supporting over 30,000 connections. In addition to VPN, accelerated multi-factor authentication (MFA) deployment was a key factor for securing employees remotely. By the end of 2020, 100% of state employees now use the more secure MFA – up from 33% prior to COVID-19.

Accessibility

There are MNIT and agency digital accessibility coordinators embedded into almost every state agency. These coordinators work together to advocate for accessibility in all digital content. Digital accessibility coordinators were critical in the state's COVID-19 response this year.

With the shift to online meetings and remote work, MNIT's Office of Accessibility provided resources for state employees and the larger public on how to accessibly work remotely.

By implementing the digital accessibility standard, individuals connected with government through an improved online experience, including: applying for benefits, reading COVID-19 updates and information, and understanding changes to programs and services. State employees with disabilities who work from home were able to attend virtual meetings, collaborate on documents, and continue to provide quality services for the state of Minnesota. The Office of Accessibility, MNIT, and the Minnesota Department of Health created accessible applications, websites, and documents for the public. MNIT partnered with Department of Education staff to create the Safe Learning Model dashboard tool, developed with accessibility in mind from inception.

COVID websites, tools, and chatbots

MNIT delivered two primary websites in response to the pandemic. First, the state's COVID-19 website launched on April 6, 2020, and then the Stay Safe MN site launched on June 9, 2020. The sites highlighted the governor's daily briefings, Executive Orders, the pandemic responses and preparations, and frequently asked questions. These sites were developed rapidly and present more than 4,000 pages of information. The websites were built with Minnesotans' needs in mind. They are mobile responsive, feature chat bots and a robust search, and are designed to answer the questions of Minnesotans, rather than provide information categorized by state agency.

MN Symptom Screener

To help businesses screen customers and employees for COVID-19, Target Corp, MNIT, and the Minnesota Safety Council collaborated on a digital tool, the MN Symptom Screener. The web-based tool allowed businesses to enter non-personal health information to help decide whether someone could enter their facility. By aggregating and synthesizing this anonymous data, the MN Symptom Screener tool provided organizations with a daily snapshot of the health indicators of people about to enter the workplace. The tool was available at no cost to businesses and organizations statewide. On its release date, 591 organizations signed up for the MN Symptom Screener.

COVIDaware MN

In November, the state of Minnesota launched an exposure notification app, COVIDaware MN. COVIDaware MN notifies users if they have been exposed to COVID-19 and allows them to anonymously alert others if they have tested positive. The app was made available by the state of Minnesota with the nonprofit PathCheck Foundation, and it uses COVID-19 exposure notification technology developed by Apple and Google. The technology is built with privacy protection that ensures no personally identifiable information ever leaves a user's device. As of December, over 340,000 Minnesotans have decided to download the app to help protect their community.

Agency technology responses

The COVID-19 pandemic spurred innovations for MNIT and its agency partners across the executive branch to provide services for Minnesotans in new ways. While meeting the service delivery needs of remote workers, MNIT forged ahead with agency partners to meet Minnesotans' elevated health care, economic, and social needs that emerged during COVID-19.

- MNIT and the Minnesota Department of Public Safety Driver and Vehicle Services division (DPS-DVS) created new options for driver's license test-takers and employees that kept everyone safe by updating facilities and developing an online knowledge test. The online knowledge test can be administered at home or by a third-party proxy, which saves time, lessens Minnesotans' COVID-19 exposure risk, and provides an easier overall experience.
- MNIT supported the MNsure special enrollment period, updating the system to allow citizens to select COVID-19 as the qualifying event for special enrollment. From March 23 to April 21, 9,482 Minnesotans signed up for health care.
- At over 225 different community testing events, Minnesota IT Services worked with the Minnesota Department of Health (MDH) to ensure that the technology ran smoothly. MNIT teams set up the events – running cables in tents, setting up laptops and tablets, and connecting them to WiFi and hotspots.

Photo:
Person using the Department of Public Safety Driver and Vehicle Services division's online knowledge test.

Unemployment insurance (DEED)

One system faced intense demand during the COVID-19 pandemic – the Unemployment Insurance (UI) system at the Department of Employment and Economic Development (DEED). MNIT added monitoring and service capabilities to the UI website and DEED's call center to ensure the swift delivery of benefit changes.

MNIT scaled the infrastructure for UI website by doubling the server capacity, memory, and caching to handle an over eightfold increase in traffic. Before the state's COVID-19 response, the UI system peaked around 4,000 concurrent users. By mid-April, the system handled over 27,000 concurrent users, with more than 99.95% system uptime.

Since the beginning of the pandemic, MNIT completed 30 code releases — more releases than in the previous three years combined — to improve the UI system and to respond to program changes, such as additional federal or state funding.

Pandemic Electronic Benefit Transfer

When the COVID-19 pandemic swept through Minnesota, closures and social distancing orders designed to slow the spread of the virus placed many families in Minnesota at risk of food insecurity. In March, the federal Coronavirus Aid, Relief and Economic Security (CARES) Act created the Pandemic Electronic Benefit Transfer (P-EBT) program to provide food benefits to families with children who qualified for free and reduced meals at school, but were not receiving those meals because school buildings had closed. The P-EBT project required extensive data matching with the Minnesota Department of Education to verify families' free and reduced-price meal eligibility. MNIT, DHS, and Code for America Launched a web-based application for families to apply for benefits through July 31, 2020.

To help Minnesotans receive their benefits as quickly as possible, and to ensure an efficient process, MNIT, DHS, and Amazon Web Services also created a pilot program to text P-EBT eligible clients. The text message helps quickly alert Minnesotans that applied for P-EBT that their benefits have been issued. Approximately 123,500 people received text messages about their benefits and $116 million of P-EBT in federal and state funds were issued through the end of Oct. 2020, with service continuing as long as Minnesotans need assistance.

Strategic direction

The Strategic Plan is MNIT's vehicle to establish and work collectively toward long-term strategic objectives. To accomplish the agency's mission and vision, the Strategic Plan creates a roadmap for focus and action, creating space to define and measure strategic priorities and outcomes.

Tactical Plan

Minnesota IT Services' Tactical Plan is our guide to implementing strategic initiatives. The Plan identifies immediate opportunities for action, and it covers the time frame of January 2020 through April 2021. The tactics may evolve over time, as priorities change, and technological capabilities and toolsets improve.

Photos:
Top and bottom: MNIT leadership participating in strategic and tactical planning sessions in February, 2020.
Middle: Lieutenant Governor Peggy Flanagan joins MNIT leadership for a strategic planning session.


Cultivate a holistic and Connected Culture
Fortify the value and delivery of projects and initiatives
Promote people-centered digital government services
Elevate Minnesota's Digital Estate
Bolster successful state cybersecurity efforts

Strategic Plan

Minnesota IT Services' Strategic Plan sets the long-term vision and direction for technology strategy at the agency. It is updated biennially and incorporates input from executive branch agency leadership, IT employees, and management. Outreach, feedback, and collaboration with our staff and agency partners across the executive branch directly informed and shaped the direction of our Strategic Plan. The Strategic Plan serves as the state's master plan for IT Services.

Mission

We partner to deliver secure, reliable technology solutions to improve the lives of all Minnesotans.

Vision

An innovative digital government that works for all.

Guiding Principles

- Practice servant leadership.
- Treat everyone with respect and dignity.
- Do the right thing, especially when it is difficult.
- Ask how your actions are reinforcing or removing structural inequity.
- Promote the common good over narrow special interests.
- Be accessible, transparent, and accountable.
- Include voices from communities who will be most impacted.

There are five goals in the Strategic Plan which highlight broad primary efforts to push MNIT closer to realizing our vision. Our annual report highlights the ways and spaces where we are making progress on MNIT's strategic objectives.

Cultivate a holistic and connected culture of work

MNIT's Connected Culture is foundational to our agency. It is our contribution towards a more collaborative, innovative, diverse, and successful organization – one that makes Minnesotans proud of their government. The relationships we build with each other and with our business partners, while keeping the people we serve at the center of our work, are key to identifying opportunities to innovate and deliver effective and efficient government services to all Minnesotans.

Reimagining the Relationship retreat

In January 2020, MNIT released its Tactical Plan and began work on implementation. As part of the Tactical Plan, MNIT coordinated a day-long retreat with Commissioners, Deputy Commissioners, and other leadership from around state government on March 2. The retreat created a space where state leaders could discuss the role of technology and MNIT in delivering services for citizens, and to reestablish the relationships necessary to make those services a reality.

Photo:
Minnesota Governor Tim Walz speaking at the Reimaging the Relationship retreat on March 2, 2020.

Women IT ChangeMakers

Minnesota IT Services (MNIT) is working to address the disparities that women in IT face. Ellena Schoop, Enterprise Data Architect for MNIT, and Dr. Annie Porbeni, MNIT's former Assistant HR Director (now HR Director for Department of Public Safety) leveraged the statewide Employee Resource Group program to build a network of women technologists — Women IT ChangeMakers. Women IT Changemakers began in November 2019 and has grown to include over 100 women throughout state government.

Employee engagement team

MNIT created an Employee Engagement Team in 2019, made of individuals from across the agency – particularly important because MNIT staff are spread across multiple partner agency locations. The team hosted over 20 employee listening sessions at 12 different physical locations to hear from at least 300 employees – re-centering previous engagement efforts around our Connected Culture.

The process culminated in an Employee Engagement Action Plan, presented to agency leadership in 2020, which included recommendations to expand and improve individual and team engagement at MNIT. Executive leadership included those recommendations in MNIT's 2020 Tactical Plan and assigned the Engagement Team to lead the implementation. While implementation of the recommendations is ongoing, staff are more engaged and excited about the opportunity to make a difference with the creation of this team.

Diversity, equity, and inclusion

In 2020, MNIT endeavored to create a respectful and inclusive working environment that demonstrated appreciation and care for employees. Our leaders assess options through an equity lens, listen to employees, elevate employee voices, proactively work on inclusion strategies, and set future goals that will further advance equity and inclusion agencywide.

MNIT's 2020 Affirmative Action Plan includes more than 50 recruitment and retention activities. Our forthcoming 2021 Equity and Inclusion Plan uses the Global Diversity and Inclusion Benchmarks to measure our current efforts and set future goals.

To provide a space for employees to cope with the national reckoning with systemic racism, the agency held listening sessions after George Floyd's killing and the shooting of Jacob Blake and protesters in Kenosha, WI.

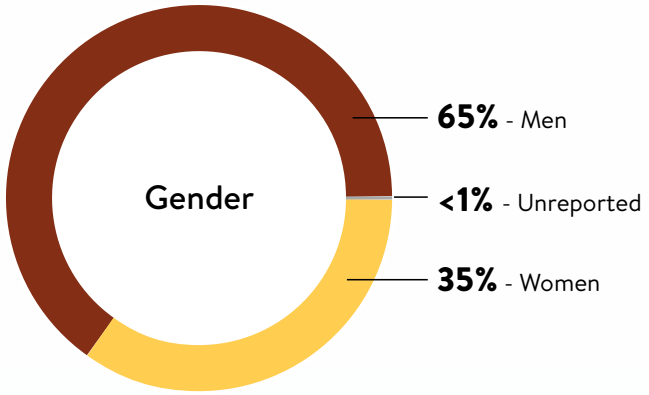
The agency continued its equity and inclusion work with the following activities:

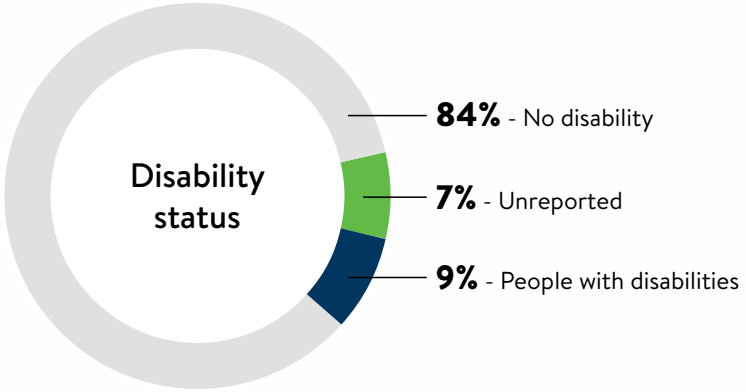
- Co-hosted a Penumbra Theatre event on race and stereotypes and hosted an "LGBTQ 101" lunch and learn event with speakers from OutFront Minnesota.
- Supported employee-led groups, such as the Women IT Changemakers, the Employee Resource Group, Employee Engagement Committee, Inclusion Team, and Tribal Liaisons Committee.
- Required live, online training in prevention of sexual harassment and protected class harassment for all managers, supervisors, and other leaders.
- Offered multiple trainings in intercultural communication, respect, and inclusion.
- Staff were empowered to obtain captioners and interpreters for meetings as needed.

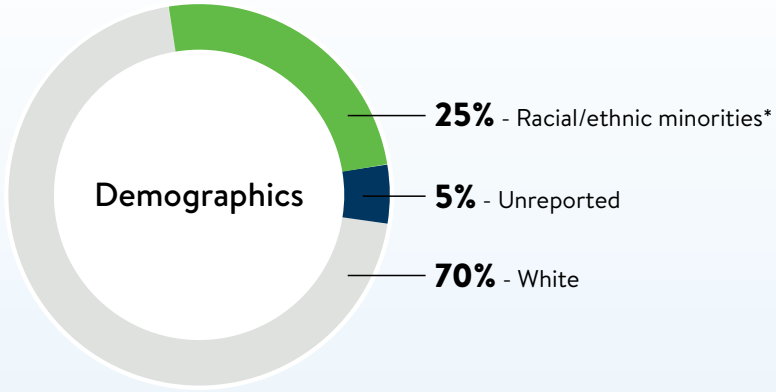
Agency demographics as of December 1, 2020

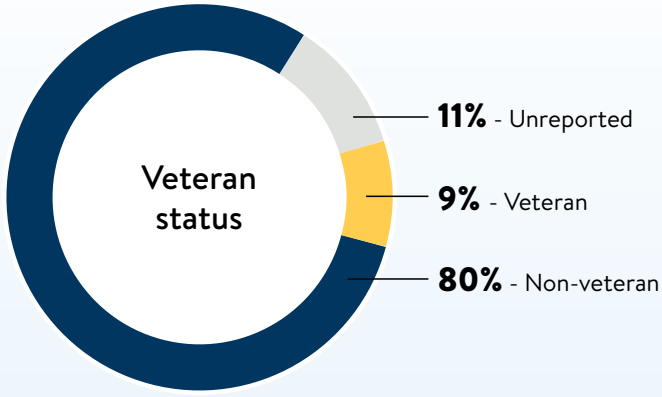
MNIT is currently focused on Governor Walz's goal of retaining at least 75% of newly hired people of color, people with disabilities, or veterans for at least two years by 2022. Since January 2020, 11.3% of MNIT's new hires have been people with disabilities and so we are poised to achieve the Governor's additional goal of employing 10% people with disabilities within our workforce.

MNIT anticipates significant advancement in equity and inclusion in 2021 and will use employee feedback and participation to drive that work.









* Racial/ethnic minorities include: American Indian/Alaska Native, Asian, Black/African American, Hispanic/Latino, Native Hawaiian/Pacific Islander, and Multiracial

Fortify the value and delivery of projects and initiatives

Our projects allow us to reimagine how state government connects Minnesotans with public services. Establishing proven methods of communication is key to project success and partner satisfaction. We ensure success by harnessing the perspectives of business partners, project managers, and enterprise staff. By balancing the needs of our business partners with project management best practices, our projects and initiatives align with state priorities and deliver results that matter.

Virtual rooms

In 2016, the Department of Revenue (Revenue) and partnering staff at Minnesota IT Services created Audit Room. The Audit Room and its companion application, Virtual Room, give Minnesotans and businesses a centralized location to allow state employees to collaborate easily with taxpayers, other state agencies, and counties while keeping information secure. This year, COVID-19 accelerated the use of audit rooms. As MNIT designed the application to have unlimited storage capacity and number of secure rooms, Revenue was able to continue its work without interruption when the agency switched to a mostly remote work environment in 2020. The Corporate Tax Division completed 50% of audits using Audit Room at the beginning of 2020 — now they complete 100% in the application. MNIT and our Revenue partners continuously improve the application with feedback from a network of Audit Room coordinators. In October 2020, MNIT rolled out an updated user interface, accessibility improvements, and improved internal reporting features.

Photo:
MNIT project managers in January 2020.

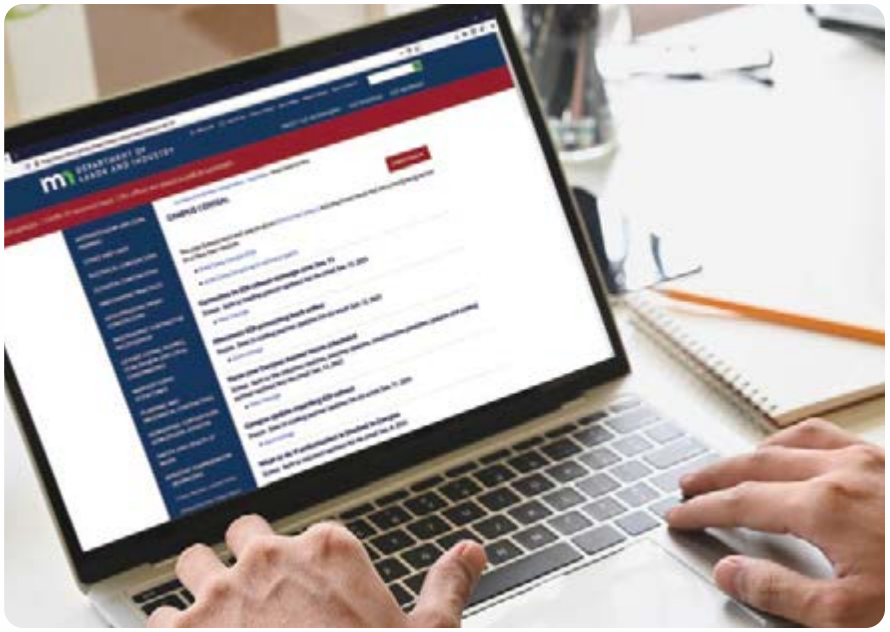
MNDRIVE

The Minnesota Department of Public Safety Driver and Vehicle Services division (DPS-DVS) launched the new vehicle services system, MNDRIVE, along with a driver services system upgrade to FastDS on November 16, 2020. MNDRIVE replaced the Minnesota License and Registration System (MNLARS), providing an all-in-one system to process driver and vehicle services for Minnesotans.

FAST Enterprises developed MNDRIVE in partnership with DPS-DVS and MNIT. MNDRIVE features include:

- A web portal for dealers and other businesses to access the system and conduct business with DPS-DVS.
- Minnesota dealer license management capabilities that allow dealers to enter sales information into the system to create vehicle records and print temporary permits.
- Electronic vehicle title and registration (EVTR) services that streamline the process between participating dealers and deputy registrars, improving accuracy and efficiency.

DPS-DVS and FAST prepared deputy registrar offices and dealerships statewide for six months in advance of the system launch. This included shifting from in-person to online training modules due to COVID-19.



Campus Workers Compensation System

Work Comp Campus, the Minnesota Department of Labor and Industry's (DLI's) new web-based portal for filing and accessing workers' compensation claims, rolled out on November 2, 2020. MNIT partnered with DLI, the Office of Administrative Hearings, the Workers' Compensation Court of Appeals, and third-party vendors to build this system.

DLI last updated its technology system in 1995. Work Comp Campus moved DLI from a paper-based, form-driven system to an online, data-driven system. Work Comp Campus is digitally accessible and available on computers, tablets, and smartphones, providing a modern experience for Minnesotans to quickly and easily access their workers' compensation claim information.

Mainframe modernization at the Department of Education

At the end of 2019, Minnesota completed mainframe modernization for the Minnesota Department of Education (MDE), successfully updating their 40-year-old mission-critical school finance system. This resulted in lower costs, reduced risk, and greater flexibility for the governing body responsible for managing the education of almost 900,000 K-12 students and 82,000 adult learners across Minnesota.

Photos:
Left: Child attending online school; Right: Screenshot of the Minnesota Service Hub, the state's IT service management tool.
Opposite page: Stillwater bridge.

IT optimization

In 2020, MNIT focused on maturing service delivery of enterprise services and leveraged organizational change management to continue moving forward as one agency. The COVID-19 pandemic demonstrated MNIT's ability to scale up for IT crisis response, which in turn matured our service delivery by years in a matter of months.

Across the agency, we made steady progress on service delivery improvements. This included the transition to the Minnesota Service Hub, a centralized management tool for state employees to get IT services and support, and for IT staff to manage those requests. By the end of 2020, nearly all executive branch entities were using the Minnesota Service Hub. With end users and MNIT staff all using a common tool, the agency can provide technical support more quickly.

Promote people-centered digital government services

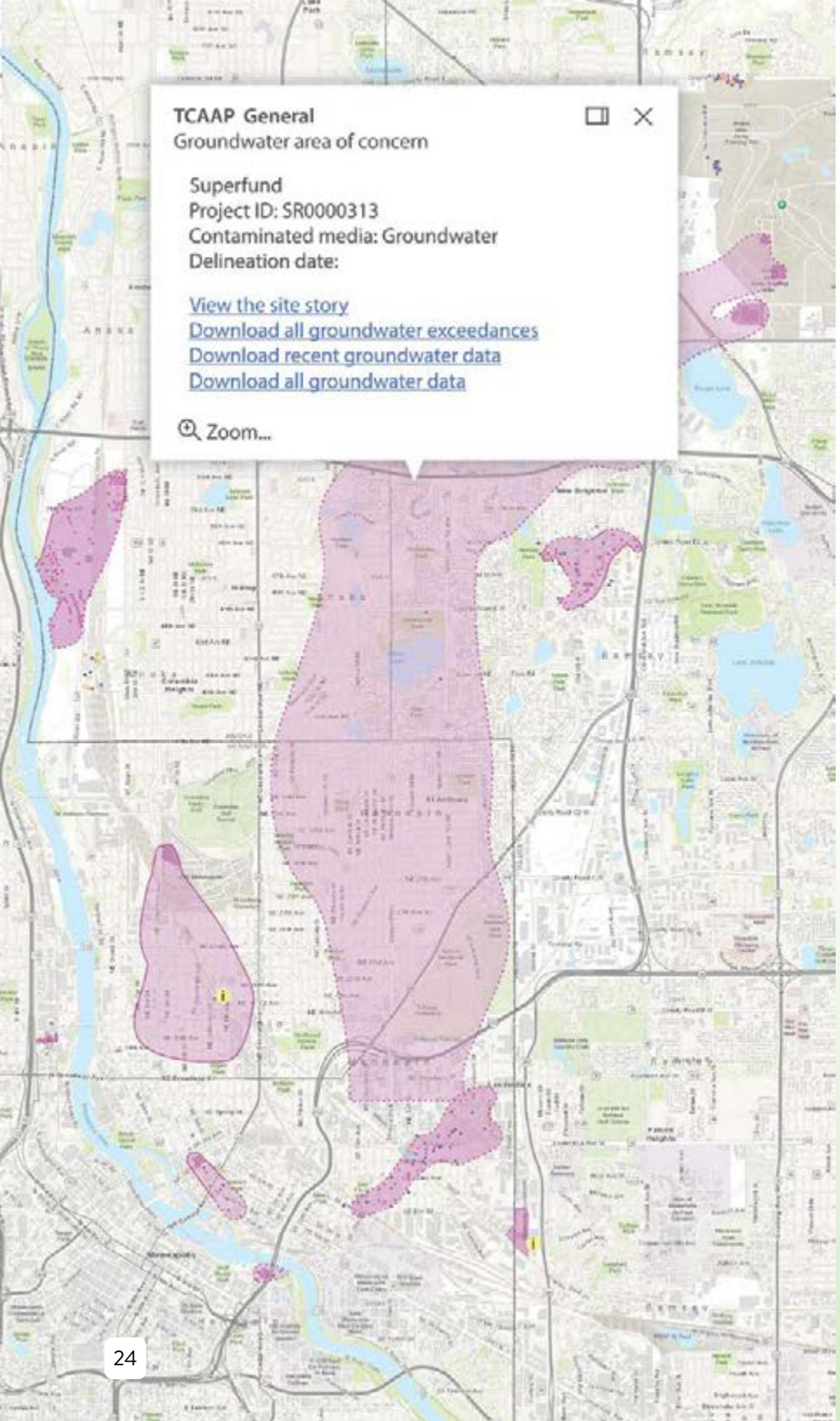
Putting the people that MNIT and state government serve at the center of our IT solutions requires transformative innovation. With a human-centered design approach, we create systems, services, and applications that use information and communication technology to not only solve problems and answer questions, but to improve government services for all.

511 upgrades

The Minnesota Department of Transportation (MnDOT) deployed multiple upgrades in 2020 to its 511 Traveler Information site to help travelers seamlessly access real-time information about road conditions, traffic incidents, weather information, and more. The system is visited by around 2 million Minnesotans and visitors per month, and up to 7 million people used it during winter storm season.

With the support of MNIT, MnDOT launched a web responsive design, a modified API, and streaming videos. Travel information is now available to private and public sectors partners such as Google/WAZE, Garmin, media partners, and municipalities. Streaming videos allow drivers to see a traffic camera in full motion video, rather than just snapshots for approximately 1,000 MnDOT traffic cameras.

MnDOT and MNIT also integrated automatic road condition reporting into the 511 application through an existing system, MnDOT Maintenance Decision Support System (MDSS), providing timely information to the public and reducing the need for manual reporting.



Groundwater Atlas

Groundwater supplies 75% of Minnesota's drinking water and 90% of agricultural irrigation. Understanding the health of Minnesota's groundwater is critical not just to decisions-makers, but also to individual citizens who need the information to make informed decisions. Minnesota's Pollution Control Agency (MPCA) released the Groundwater Contamination Atlas in June 2020, which is a tool for learning about contaminated groundwater at sites around the state.

For an area of concern, users can download groundwater sampling data, and learn about the contamination status of any cleanup site and its potential health risks. The Atlas, built in partnership with Minnesota IT Services staff at MPCA, made this data available to every Minnesotans for the first time, increasing transparency about a critical resource. The tool also improved efficiency within MPCA, reducing staff time that was used to pull the information manually.

Digital accessibility

Digital accessibility is a key tool and driver for an inclusive digital government that works for everyone. Minnesota IT Services' Office of Accessibility oversees the implementation of accessibility standards for Minnesota's executive branch to provide resources that ensure applications, websites, and documents are digitally accessible.

Training and awareness

To promote accessibility, the Office of Accessibility trains state employees on a variety of accessibility-related topics. From January-September 2020, over 1,370 people took the Office's online training about creating accessible documents. This year, the Department of Employment and Economic Development (DEED), required employees to take an Accessible Word introductory training course, dramatically expanding the number of trained employees across the state.

Governor Tim Walz proclaimed May 21 as Minnesota's 2020 Digital Accessibility Awareness Day. To emphasize how the state of Minnesota ensures digital accessibility for Minnesotans and state workers across state agencies, MNIT's Office of Accessibility hosted a live interview event "Stories of Inclusion: State Government Accessibility."

On September 1, 2020, the state of Minnesota celebrated the tenth anniversary of the digital accessibility and usability standard. In celebration and to raise awareness, the Office of Accessibility held trainings and panels to inform state employees. 182 people attended the panel events and 275 people attended the trainings.

Designing with accessibility in mind

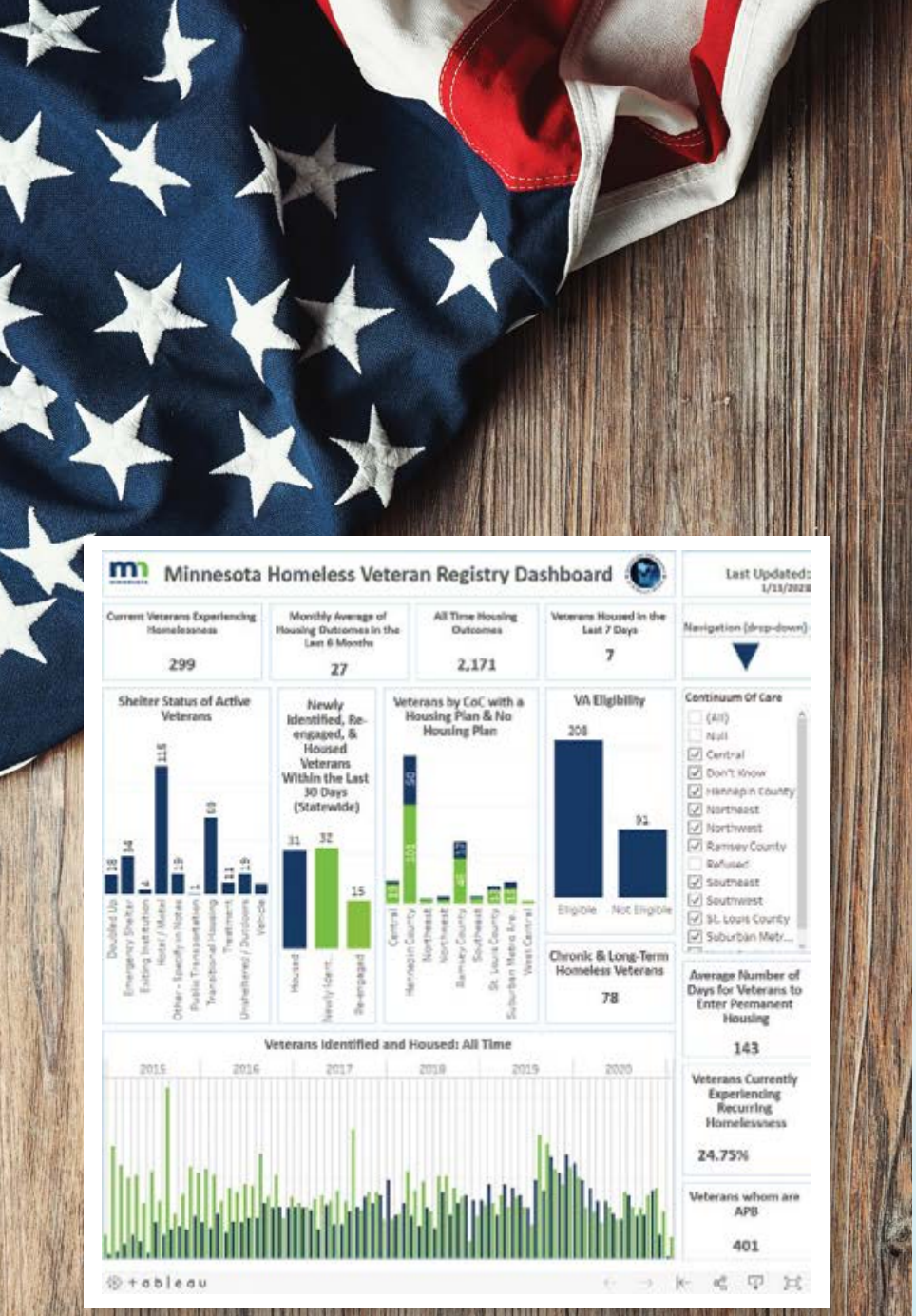
Minnesota's statewide Maps Community of Practice (MCOP), a group of state staff across 15 agencies, implemented a first-of-its-kind set of online resources, guidance documents, tip cards, and web content for making digital maps accessible. Launched in late 2019, the tools and solutions span multiple disciplines in cartographic and geospatial communities ranging from cartographic map design and static web maps to interactive web maps.

The tools and resource guides created by MCOP are available on the Minnesota IT Services website, and are leveraged internationally by cartographic, geospatial, and accessibility communities in the public and private sectors, and at geospatial, cartographic, and accessibility conferences nationwide. Since its implementation, the resources have been accessed by 5,700 unique visitors across 46 states, 3 provinces of Canada, 37 countries, and has seen over 4,000 downloads of the resources.

Radio Talking Books

After understanding the current needs of individuals that use Radio Talking Books (RTB), a service intended for the use by persons who are blind, visually impaired, and print-disabled, the State Services for the Blind (SSB), housed in the Department of Employment and Economic Development, developed a mobile application in partnership with MNIT. The app shares print materials with its target audiences via audio, so that they can be well informed, participate in their communities, and continue to live independently. For many years, listeners accessed RTB through a proprietary radio receiver and an online stream.

Apple and Android mobile applications replaced the radio broadcast, providing access to daily newspapers, magazines and periodicals, and a wide variety of books that appeal to a diverse range of interests. MNIT worked closely with SSB to ensure that the applications were accessible for their audiences, performing user acceptance and usability testing with people who use assistive technology. To ensure greater access, Minnesotans can ask Amazon Alexa smart speakers to play RTB and listen to daily newspaper stories from Greater Minnesota.



Elevate Minnesota's Digital Estate

In 2020, MNIT strengthened its vision and plan to lift up Minnesota's Digital Estate – the collective information from over 2,800 state applications that connect Minnesotans to jobs, healthcare, environmental data, educational resources, Minnesota's great outdoors, and more. Technology helps people to understand the stories that data can tell through data visualization tools, improving decision-making in state government.

Homeless Veterans Registry

The state of Minnesota is committed to ending homelessness among its veterans, and an important step toward that goal is understanding the barriers that individuals may face in accessing affordable and permanent housing. In August 2019, MNIT and the Minnesota Department of Veterans Affairs (MDVA) debuted a revamped application that allows housing and service professionals to more efficiently assess the needs of veterans experiencing homelessness, prioritizing those that are facing the most barriers, have been experiencing homelessness the longest, or need critical care. Using technology, this solution brought together non-profits, other government entities, and the private sector to review data and find creative solutions to house our veterans.

Since the application's launch, the registry data has helped the agency create programs that specifically targeted high-risk veterans, and ultimately address the needs of the 245 veterans facing homelessness on the registry. Allowing the public to access this data via a dashboard ensures the state is held accountable for its results. By November 2020, Governor Walz announced that five suburban metro area counties have received federal designation for ending veteran homelessness.

Water Conservation Reporting System

MNIT partnered with the Minnesota Department of Natural Resources (DNR) to significantly improve the measurement and evaluation of water conservation and water use efficiency through a new Water Conservation Reporting System. To our knowledge, it is the first and only statewide water conservation reporting system in the nation. The system is cloud-based for easy data entry and record management.

The Minnesota Water Conservation Reporting System's annual reports help various sectors to learn more efficient and cost-effective ways to conserve our water resources. The data will continue to guide water use decisions in the future. The new system was launched in 2019 and updated in 2020 to integrate with the system that Minnesota uses to track water usage.

The 2020 reporting cycle was the first time all 507 of Minnesota's permitted commercial, industrial, and institutional businesses, along with 907 cities across Minnesota, could report their water use, loss, and savings totals. More importantly, they can learn what other businesses are doing to improve efficiency and cost-effectiveness.

Enterprise data visualization

MNIT introduced comprehensive data measurement and visualization to enterprise services, modeling data-driven decision making for state government. What began as a way to measure the systems needed for the remote work transition due to COVID-19, is now used to provide key data and manage day-to-day service performance. A tickets dashboard allows MNIT to drive down the amount of time tickets remain unresolved by creating accountability through the transparent use of data.

Usage of our enterprise data visualization tool has increased by 167% in 2020 across the executive branch. At MNIT, this transparency allows enterprise service divisions to set goals with our business partners that drive accountability and build trust. For example, an open and aging service tickets dashboard allows MNIT to drive down the amount of time tickets remain unresolved by creating accountability through the transparent use of data.

Going forward, MNIT will mature the data visualization needs of the executive branch by establishing a governance process.

Geospatial standards and public engagement

Over the past two years, the Minnesota Geospatial information Office (MnGeo) worked with the Minnesota Geospatial Advisory Council and broader geospatial community to develop and implement standards for GIS data. The standards dramatically improved data-sharing and created new avenues for stakeholders across Minnesota to utilize standards-based geospatial data. Local stakeholders share road centerline, parcel, and address point data with MnGeo four times a year. The Geospatial Information Office normalizes and shares the data, reducing the need for multiple state agencies to make individual requests to local partners for the data. Now, these agencies can retrieve the data on-demand from the Geospatial Information Office's state portal.

The Geospatial Advisory Council aligned Address Point and Road Centerline standards with the National Emergency Number Association (NENA) guidelines. Using these standards, Minnesota created the first-ever statewide address data point layer, which was provided to the US Census Bureau for the 2020 Census.

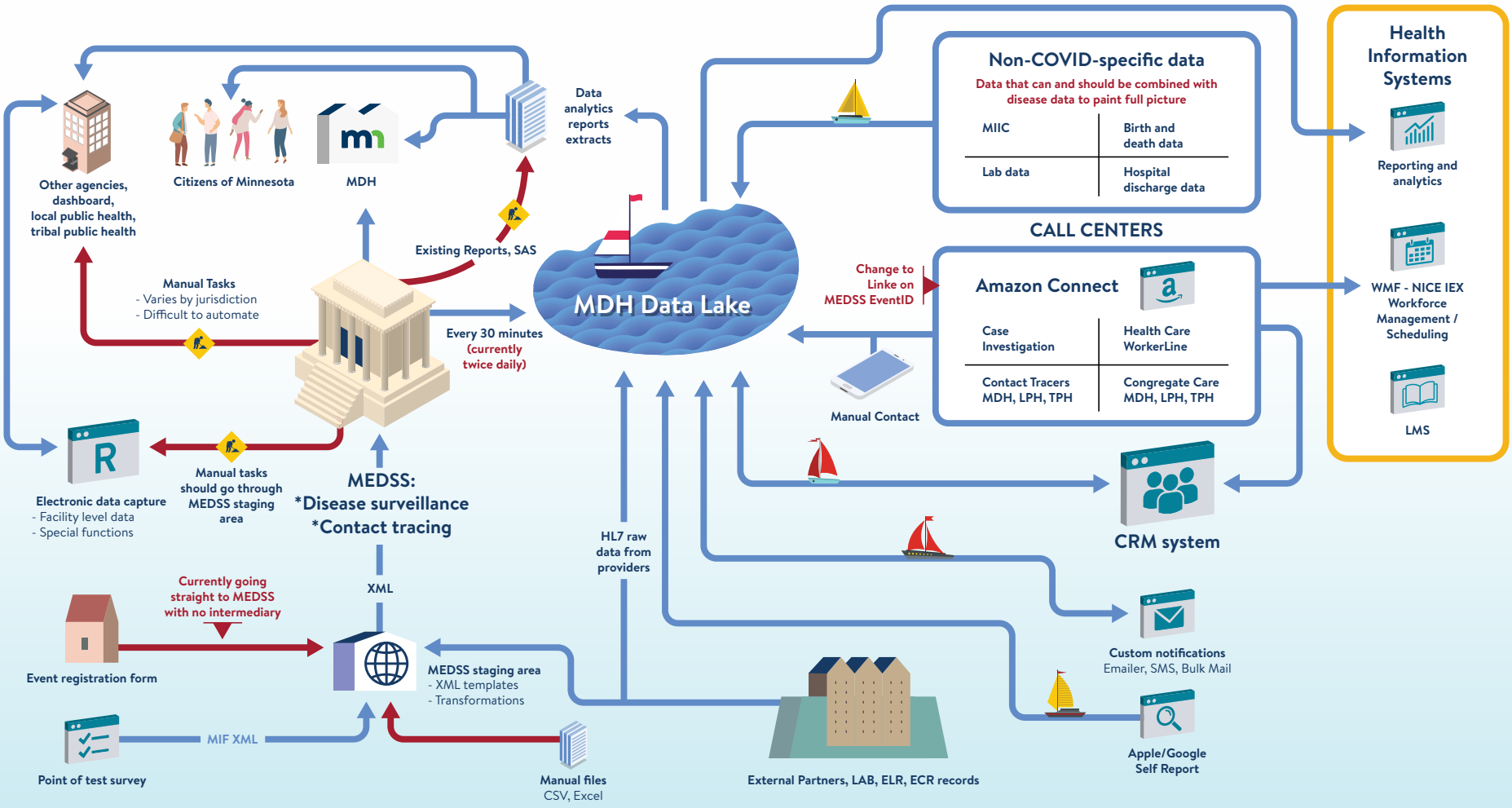
Both the address and roads datasets, as well as the parcels, were created by using data from local authorities, making the data credible, reliable, timely, and accurate. With these new data layers in place, Minnesota was also able to respond quickly to provide transparent data for the COVID-19 testing location map.

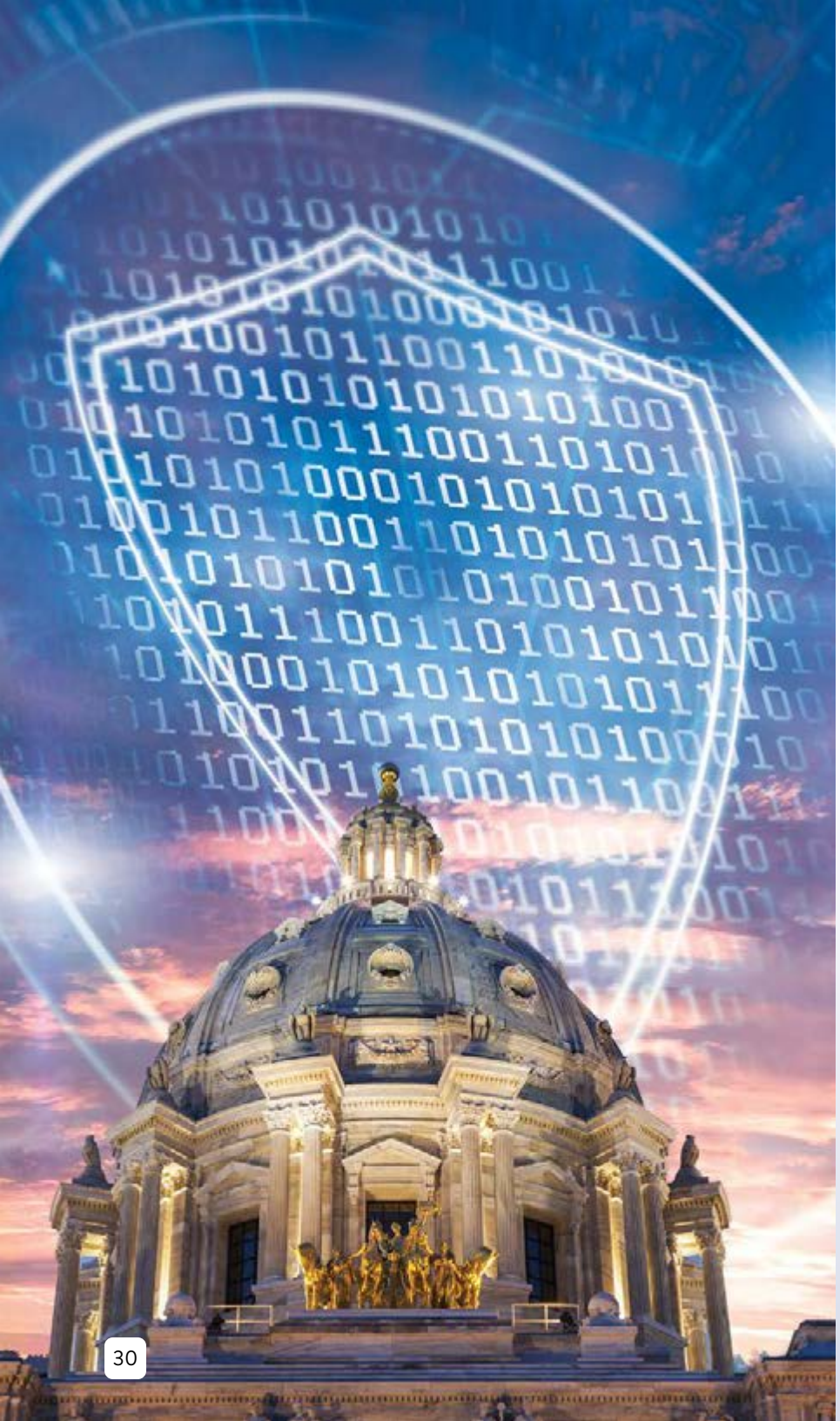
Data lake

In 2020, MNIT staff partnering with the Minnesota Department of Health (MDH) went live with the state's first AWS data lake to integrate and report on disparate data sets to fuel operational improvements in the state public health system and inform public policy. The agency is using the data lake to house many of its critical COVID-19 pandemic response data sets, including Minnesota's Disease Surveillance system, the Electronic Lab Reporting master archive, and the COVID Immunization Registry, among others. Data lakes allow the agency to securely house large data sets where they can be used for reporting or to feed other systems, reducing workloads on already stretched systems. For example, data lake technology fuels case investigation and contact tracing processes by moving COVID-19 cases from the Minnesota Disease Surveillance system into an integrated workforce system. Data lake technology allows data managers to combine disparate data sets in unique ways without data standardization and normalization, therefore greatly increasing our capacity to integrate systems and create new data products that inform COVID response operations and public policy. MDH and MNIT are also looking at data lakes as technology that can empower the move to artificial technology and machine learning (AI/ML) applications.

Photo:
Opposite page: Infographic showing technology integration with Minnesota Department of Health "data lake."

COVID Response Technology Stack





Bolster successful state cybersecurity efforts

One of Minnesota's greatest challenges is cybersecurity threats facing its IT infrastructure, data, and the systems that Minnesotans depend on. Although MNIT's cybersecurity strategy is constantly being refined, no organization is immune to increasingly sophisticated cyber-attacks. In 2019, legislative investment and collaboration with the Blue Ribbon Council Cybersecurity Sub-Committee allowed MNIT to focus on top cybersecurity priorities to make substantive progress in our security strategies.

Statewide security

In 2020, MNIT completed a major, enterprise-wide project to consolidate all web content protection tools throughout the executive branch under a single MNIT service. This project helped block and prevent malicious software and phishing emails across the enterprise and improved overall security protections and response time to incidents. Prior to this project, state government had more than 13 separate systems and teams providing these protections, leading to more expense and a slower response time during a cyber-attack. When a new phishing attack or malicious site targeting state employees was identified, it often took hours – or even days – to get sites blocked in all the protection systems across the state. Now, with the new service in place, MNIT's Security Operation Center (SOC) can identify and block new attacks in seconds and protect over 35,000 state employees in an instant.

The new unified service, along with deployment of other email policy changes, advanced threat protections, and anti-malware solutions, contributed to a significant decrease in cyber threats on employee computers and devices – decreasing from 340 events in quarter 2 of 2019 to 85 events a year later in quarter 2 of 2020.

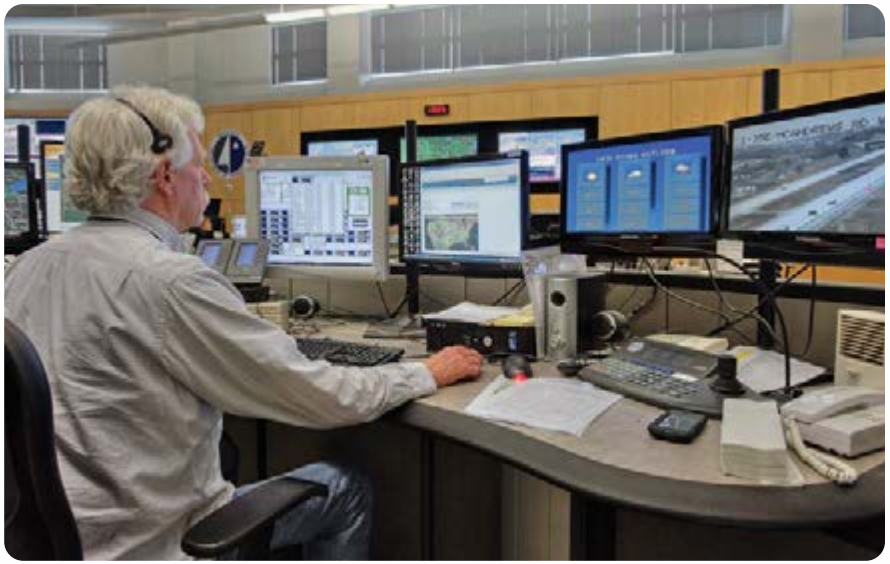
The direction MNIT took with web filtering also supported secure remote work by providing the same protections to devices, whether on or off the state network.

Cybersecurity education and awareness

In 2020, MNIT deployed a statewide phishing education campaign for state employees to reduce the number people who click on malicious emails – the most common way for bad actors to bypass our secure defenses. These phishing campaigns further provided each agency with a report card to illustrate how their staff responded to, and how they reported, malicious emails.

Complementing the statewide phishing campaign, MNIT also initiated monthly cybersecurity messaging for all state employees with a focus on reporting, phishing awareness, passwords, and safe remote work.

As part of Cybersecurity Awareness Month in the state, Minnesota IT Services and Minnesota's Employee Resource Group, Women IT ChangeMakers, led an interactive cybersecurity event with the Girl Scouts of Minnesota and Wisconsin River Valleys (GSRV). The October 24 event focused on building cybersecurity best practices to increase individual and community security. Over a dozen women from MNIT gathered virtually to help about 40 girls build real-world skills, like communication, making decisions in a crisis, and investigating a problem. The program taught the Girl Scouts how to identify phishing emails, test cryptology skills, and handle a hack as part of a team.



MnDOT application preservation

The Application Preservation Program is an ongoing complex cybersecurity initiative driven by MNIT partnering with the Minnesota Department of Transportation (MnDOT).

Application Preservation mapped out an ongoing strategy to identify technical health issues and prioritize resolution, to engage business partners in investment decisions, and assemble teams to complete the technical work needed. MNIT's Application Preservation program for MnDOT is based on a three-year cycle to help standardize server stacks and keep applications on current, supported platforms. By embedding Application Preservation into every service, MnDOT improved their risk profile, and achieved an agency-wide cybersecurity focus.

Photo:
MnDOT Regional Transportation Management Center (RTMC).
Photo courtesy of the Minnesota Department of Transportation.

State response to DDoS Attacks

Keeping our communications systems secure during times of crisis is critical to protecting the Minnesotans that we serve, and we work hard to meet the challenging and evolving threat to those systems every day. In late May, MNIT's Security Operations Center (SOC) defended against distributed denial-of-service (DDoS) cyberattacks aimed at overloading state information systems and networks to tip them offline. After the killing of George Floyd, the SOC monitored 14 consecutive days of DDoS attempts specifically targeted at state government resources. The waves of these DDoS attacks over the two-weeks period had shifting tactics: targeting different resources or modifying attack patterns in an attempt to skirt the security defenses. The SOC expanded its purview of response to ensure our DDoS mitigations continued to function for the immediate threats, and MNIT gathered intelligence from partners to quickly implement advanced defenses that would prepare critical resources from the evolving DDoS attacks. While defending from the attack and simultaneously advancing infrastructure capabilities on a compressed schedule, MNIT ensured that access for Minnesotans to websites remained available over 98.6% of the time during the DDoS attacks.

99.82%

Average Monthly SLA Uptime for 2020

The service level agreement (SLA) specifies 99% uptime should be maintained over the course of the entire year, not counting outages occurring during planned maintenance windows.

Expanding partnerships

Cybersecurity is a shared responsibility for everyone, including our state partners, counties, cities, and state employees. This year, we expanded our ability to collaborate across jurisdictions.

Statewide Security Monitoring Initiative

After adding 21 new county participants in 2019, the Statewide Security Monitoring Initiative (SSMI) has continued to expand service capabilities to support partners in county governments throughout Minnesota. This expanded service provides reliable tools to identify and assess computer systems to help county IT staff find and fix vulnerable technology systems before they can be hacked and exploited. Backed by an experienced team of MNIT experts, vulnerability management services can provide advice about how to target resources for the most critical concerns. MNIT also built on the county partnerships through focus group sessions, one-on-one county meetings, and testing of new capabilities including a compromise assessment tool.

Public universities

MNIT has enjoyed a longstanding public partnership with the state's major public university systems to help provide reliable, secure internet and telephone connectivity to government across the state through MNET. The partnerships with the University of Minnesota and the Minnesota State University system benefit all three organizations by improving services and reducing costs through cooperative arrangements. To further minimize the impact of events like the DDoS attacks of June 2020, MNIT and the University of Minnesota expanded their longstanding partnership to cooperatively purchase and implement additional cyber defenses that not only benefit the two organizations, but also provide additional protections to all state and local governments who receive network services from MNIT.

Election security

In 2016, Minnesota was one of 21 states targeted by foreign actors seeking to impact the U.S. election. While the 2016 efforts were not successful in Minnesota, MNIT continued to work with the Minnesota Secretary of State's office over the last four years to expand current capabilities and build out strong relationships with federal, state, and local partners to ensure that Minnesota could continue to deliver a safe and secure election. MNIT worked with ten different agencies at all levels of government to prepare, test, plan, and execute the most detailed election cybersecurity monitoring and response effort ever seen in the state. Through the Secretary of State's new Cyber Navigator program, all 87 counties actively collaborated in these efforts.

This election cycle, MNIT identified increased attention on state and county networks with increased attempts to exploit vulnerable systems. We identified a 25% increase in phishing attacks in the days leading up to the election and a 200% increase in new, advanced malware targeting employees on election day. In each case, cyber defenses and inter-governmental partnerships worked as designed and prevented any major, impactful events – helping to ensure a safe, secure election for Minnesota.

25%

Increase in phishing blocked or reported in the week before the election

200%

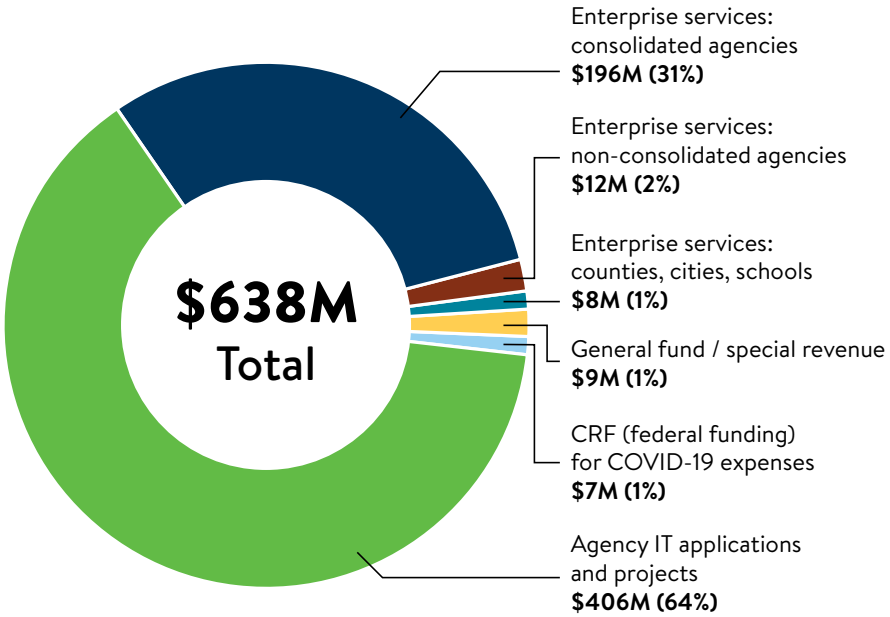
Increase in advanced malware blocked on election day compared to normal

Enterprise financial summary

How is MNIT funded?

Minnesota IT Services is primarily funded by revenue received from executive branch and non-executive branch entities for IT services. This funding includes enterprise rate-based services and pass-through funds for IT projects and applications. Only one percent of funding is from general fund appropriations and special revenue funds.

MNIT funding, FY20

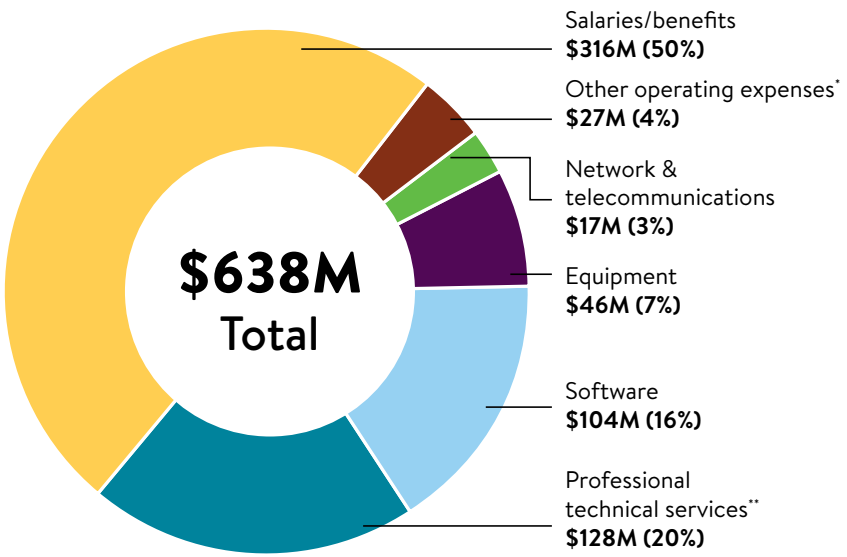


Note: Revenue and expense includes all DHS IT costs.

How are MNIT's funds spent?

In FY20, MNIT expenses across all customers were $638M. State agencies that are subject to IT consolidation spent $618M on technology.

MNIT expenses, FY20



* Other operating expenses include space, utilities, statewide indirect, travel, supplies, employee development, debt service and working capital.

** Professional technical services include both outside and state vendors.

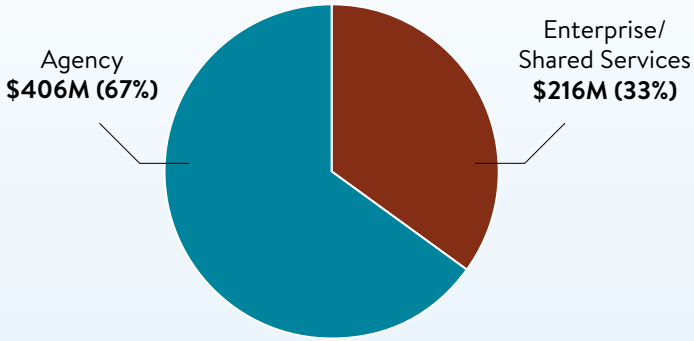
How MNIT maintains low IT spend

Enterprise services are delivered centrally to maximize efficiencies and reduce costs for agencies. Examples include email, desktop support, and telephone services.

Local agency services are delivered at agency offices to ensure a close IT-business relationship. These services are largely unique to lines of government business and involve support of agency-specific applications and projects.

FY20	Total Expenses (in millions)
Total IT Spend	618
Total STATE Spend***	39,439
IT Spend as % of total spend	1.6%
Gartner ratio - state/local government >$10B****	2.4%

MNIT operates as a chargeback organization delivering both enterprise and local agency services.



*** For state agenciesa subject to IT consolidation.

**** Gartner Research.

Financial transparency through data analytics

In 2020, MNIT launched the Athena data visualization tool, which provides financial dashboards and data analytics that help agency business partners manage finances for their IT services.

Agencies can now compare their budgets with actual spending patterns, review billing data to validate service usage, and predict future usage patterns in real-time financial dashboards. They can see the financial impact of using specific services and make better informed decisions as they navigate challenging budget pressures.

With data analytics, MNIT was able to work more inclusively with agencies to set rates for our IT services and provide transparency in how service costs are identified and passed along to customers.

Agency recognition

MNIT Annual Awards

Our annual award program recognizes outstanding work of employees, managers, teams, and projects. Nominated by their peers, recipients receive the highest recognition for their service excellence, and exemplary performance in fulfilling MNIT's mission, vision, values, and priorities.

Employee of the Year

Melissa Warhol
Safety Officer and Security Analyst

Manager of the Year

Emily Shimkus
Communications Director

Team of the Year

Unemployment Insurance Development and Technical Team
MNIT partnering with DEED

Project of the Year

Enterprise Scheduling and Timekeeping (EST) System
MNIT partnering with MDVA

Partner of the Year

Minnesota Department of Human Services

NASCIO Awards

Four of MNIT's projects were selected as finalists for the National Association of State Chief Information Officers (NASCIO) State IT Recognition Awards.

The award nominations showcase the use of information technology to address critical business problems, more easily connect people to their government, improve business processes, and create new opportunities that improve the lives of Minnesotans. MNIT's finalist projects:

- MNIT and MDH: Cloud, AI, and Data Lake Transformation
- MNIT and DNR: Digital App Manages Public Water Access Sites
- MNIT and MDVA: Modern Digital VATS-Education System Serves Veteran
- Collaborative Maps Community of Practice: Creating Groundbreaking Accessible Map Guides

ORBIE Awards

Minnesota's Commissioner of Minnesota IT Services, Tarek Tomes, was recognized by the Twin Cities CIO of the Year ORBIE Awards for excellence in technology leadership. The award, presented on September 18, 2020, honors chief information officers (CIOs) who have demonstrated leadership, innovation, and excellence.

Digital States Survey

Minnesota received an overall grade of A- in the 2020 Digital States Survey. Sixteen states received top grades, earning an "A" or "A-" designation. Minnesota was also recognized as one of the top three states for exemplary work in data-driven government. The state's use of systemic data-based analytical mechanisms and techniques are used to efficiently and effectively manage the state's business and technology.

The Center for Digital Government specifically recognized Minnesota's effort to improve citizen engagement: the use of chatbots on COVID-19 websites and an accessible map project that improved the ability for all Minnesotans to access information on state agency websites.

Legislative update

The 2020 Legislative Session ended on May 20, 2020 and was unlike any session in recent memory. Seven special legislative sessions followed the 2020 regular session, as the COVID-19 pandemic continued to require the attention of the Minnesota legislature.

The Coronavirus Relief Act (CRF) reimbursement approved by the Legislative COVID-19 Response Commission significantly supported the massive transition of state employees to remote work for nearly the entire year. The funds also helped support the resources that developed the public-facing Stay Safe Minnesota website, which gave Minnesotans access to critical updates and resources for the state's pandemic response. Given the incredible volume of traffic to this site – up to 5 million hits in a single day – and its over 4,000 pages of essential content, additional resources were required to ensure the information was available. Finally, the CRF funds supported the deployment of chatbots on the state's COVID-19 response website to provide instant information for business owners, employees seeking unemployment insurance, and Minnesotans needing health care information.

Photos:
This page: Senate chamber at the Minnesota state capitol.
Opposite page: Members of the Blue Ribbon Council on Information Technology.

Blue Ribbon Council on Information Technology

The Governor's Blue Ribbon Council on Information Technology issued their report on June 30, 2020. The report was the culmination of 18 months of work by leaders from private and public sector IT, government leaders, and members of the legislature. The recommendations included in the report are helping to advance and improve the State's approach to technology and business transformation, so we can provide solutions that best meet the needs of Minnesotans. Governor Walz renewed the BRC-IT with Executive Order 20-77 (PDF).

Closing letter – Zarina Baber

Assistant Commissioner, Office of Transformation and Strategy Delivery

Achieving our vision of an innovative digital government that works for all is only possible when we embrace true transformation. Of course, with any large organizational transformation, our success will depend on our commitment to partnership, productive change, and strategic action. It depends on our ability to align our work at a high level, across agencies, across business needs, and across end users. This means we must ensure that consistency, risk and organizational change management, and accessibility are embedded throughout our proccesses. They must be taken into account with every new initiative we tackle.

MNIT's successful transformation must, at its core, be human-centered. Our projects allow us to reimagine how state government connects Minnesotans with public services. We can leverage this vehicle to ensure that Minnesotans experience digital services in a convenient, intuitive environment rather than needing to understand the complex inner workings of the executive branch.

When we are more agile, we can shift priorities and resources quickly to respond to emerging needs. We can ensure that risks are identified and managed earlier to prevent surprises. A culture of continuous innovation and human-centered transformation is essential for a sustainable transformation. Minnesotans and stakeholders will better understand how changes impact their experience and benefit them.

To move in this new direction, we launched an Office of Transformation and Strategy Delivery that will focus on modernizing how we think of and deliver value. We will strengthen the ties between MNIT, state agency strategic initiatives, and Blue Ribbon Council recommendations, to truly embody our Connected Culture. We spent a large portion of 2020 discovering how to move the state's delivery of services and programs forward through shared ownership of technology and IT projects. Active, strategic collaboration with our agency partners allows us to step into the strategic IT advisor role that MNIT was created to assume, and leads to better outcomes for Minnesotans.

MINNESOTA IT SERVICES

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