

2018-2019 Annual Report

Executive Summary

We are making important strides to lay a foundation for North Dakota's future, including making significant investments in our team members and our state's 21st century technology infrastructure. Through investments in the people, processes and technologies that enable the business of government, we are also creating a strong framework for future growth across all industries.

In order to support that continued growth and our national leadership in precision agriculture, Unmanned Aerial Systems, energy and the economy writ large, we have to be able to secure the increasingly interconnected technology backbone. And we can't expand this 21st century critical infrastructure if we can't secure it, which is why Legislative leadership this past session in terms of cybersecurity investments and IT unification were so instrumental.

We also continue to make significant investments in our team members. Our emphasis on training, professional development, and upskilling is part of a holistic approach to ensure we can compete in one of the most in-demand career fields in the world. With an 18-month half-life - meaning that within IT industry, half of the knowledge an IT person has is no longer relevant 18 months from now - we are building a culture of continuous improvement and learning.

Through training opportunities including Business Process Improvement and Leadership Everywhere, we are helping ensure our team can support the state's growing demand for technology infrastructure now and well into the future.

This past year we advanced the state's IT goals through a variety of initiatives and steps:

- Finalized the implementation of network upgrades that provided improved bandwidth for the education and government communities.
- Enabled Office 365 migrating multiple services from on-premise to a cloud-based solution while providing state employees with a modern and robust productivity and collaboration toolset. The solution also provided a number of technologies that helped bolster the security posture of these tools and the data they contain.



- Expanded the state website platform to provide a more consistent and secure user experience and save taxpayer dollars, with several dozen agencies on the platform and many more making the transition.
- Provided numerous opportunities to educate stakeholders in key areas including Artificial Intelligence and Robotic Process Automation to make more informed decisions about where and how these technologies can best meet business needs.

A foundational element to all of our efforts is unification, and the alignment of IT across cabinet agencies into a shared service model that will help position the state to best leverage this critical infrastructure.

By furthering our understanding of the IT needs across state government, investing time with agency IT staff and leadership to better understand the IT skillsets, systems and processes that are in place today - or that are required - we are positioning North Dakota to enable business now and in the future.

We have enormous potential to harness technology in ways that will create more efficient, effective services for all North Dakotans. We look forward to continued partnership and working with you to making thoughtful, intentional investments in our team and our technology capabilities. Thank you for your tireless efforts on behalf of our citizens, and for your continued efforts to modernize and transform our state's IT infrastructure to best serve our citizens.

Shawn Riley
CIO

Accomplishments

Unification

The 66th Legislative Assembly appropriated \$27.6 million for the unification of five agencies. This transferred 96 IT professionals to the shared services team. The Assembly also provided legislative intent that ITD provide direction to the executive branch agencies in the Governor's cabinet not included in the IT unification initiative project regarding IT strategic planning and operations. It is further the intent of the 66th Legislative Assembly that the 67th Legislative Assembly implement the findings and recommendations resulting from the IT unification initiative pilot project. The transition takes effect July 1st, 2019.

Leadership Training

NDIT continues to invest in our team and the statewide workforce with implementation of dozens of Leadership Everywhere and Business Process Improvement trainings. In addition, during 2018 - 2019, 26 team members participated in the Amplify Mentoring Program, bringing the four-year total to 104. And while the Business Process Improvement classes were only in the first phases of rollout by the end of FY 2019, 553 people have completed one or more classes since they launched in May 2019 - a foundational effort to helping NDIT as well as partner agencies transform outdated business models.

Cybersecurity

Cybersecurity and the protection of our citizens' information and state systems is a priority for the state. The global cybersecurity threat continues to grow as state-sponsored actors, social hacktivists and criminals seek opportunities to exploit individuals and organizations. In the past six months we have defended against:

- 34,000,000 vulnerability attacks and 3,300,000 denial of service attacks;
- 88,000,000 spam and phishing messages;
- 1,300 zero-day attacks (attacks in the wild with no known fix); and
- Numerous malware threats, which at one point were infecting one-third of ND schools.

The 66th Legislative Assembly passed Senate Bill No. 2110 which will require ITD to advise, oversee, and regulate cybersecurity strategy for all state executive branch agencies, including institutions under the control of the State Board of Higher Education, counties, cities, and school districts. The department is required to consult with the Attorney General and the legislative and judicial branches regarding cybersecurity strategy. This is a big step towards establishing a unified security framework across all entities (SLTT, K-12, Higher Ed). The Assembly also appropriated \$17.7 million in Cybersecurity funding, including 8 FTE to help assess current security postures and advance our protections against cyber-attacks.

We are in the process of filling these positions as well as completing numerous cyber maturity assessments to help address gaps and create appropriate strategies to further mitigate threats.

Health Technology

NDHIN: Increased usage of the [North Dakota Health Information Network](#) (NDHIN), which facilitates secure sharing of patient electronic medical records to support providers in making informed and quality healthcare decisions.

- Expansion Project: Federal funding at 90% FFP/10% State Match was obtained to expand the footprint and depth of the NDHIN. This expansion provided a platform shift to enable improved health information exchange, population health analytics and care coordination. The expansion also supports an active outreach program that has re-engaged with participating providers to regenerate interest and increased activity (expanded data contribution) as well as recruited new types of providers. The expansion project is 18 months in and has already seen dramatic growth in participation and utilization. NDHIN currently has 240 signed participation agreements representing over 400 points of care across the state. The master patient index now houses over 1.2 million unique patient records. Over 3,000 patient records are accessed per week by over 3300 users of the system. Additional work under the expansion project includes assessments of the provider directory, public health interoperability, encounter alerts & notifications, modernization of the cancer registry and sustainability planning.
- North Dakota Healthcare Directive Registry: Development on the North Dakota Healthcare Directive Registry has been delayed but currently back on track. This system will allow citizens to store, maintain, and retrieve important healthcare documents, such as advance directive documents that are key when determining proper patient care. Users can share documents with providers and family as they choose. The system will be publicly launched Q4, 2020.
- Other registries: NDHIN is integrated with the ND Immunization Information System/Registry with bidirectional exchange of data. NDHIN is also providing data to the Autism Registry; syndromic surveillance and electronic laboratory data to Department of Health systems to support public health initiatives.

Education

ND K-20W: The ND K-20W Cyber Education Initiative is building North Dakota's 21st century workforce through a whole-of-government approach to computer and cyber science (CCS) education and training. Computer science and cybersecurity skills are foundational in the 21st century economy. The K-20W initiative is focused on preparing every student to succeed in a digital world, and helping to create awareness, inspire a grassroots movement, organically grow our workforce, and build capacity toward the goals of Every Student. Every School. Cyber Educated.

A few of the accomplishments during 2018 - 2019 included:

- The state's new K-12 computer and cyber science content standards were the first-in-the-nation to emphasize cybersecurity - a growing, global career field with virtually zero percent unemployment.
- In partnership with Microsoft TechSpark, the first statewide, simultaneous Hour of Code took place in December 2018 with 100 schools and more than 5,000 students participating. During the 2019 Legislative Session, EduTech hosted a technology Showcase highlighting 10 schools that are leaders in Computer Science and Cybersecurity innovative education. The ND K-20W team also is actively promoting and supporting Robotics/STEAM clubs throughout the state.
- In the state's first year participating in the SANS Institute's Girls Go CyberStart program, 310 girls from 28 schools participated - the highest per capita participation out of 26 states overall. For Cyber FastTrack, the college version of the program, 10 out of 69 participants were women, and 10 of the 69 advanced to the quarterfinals. A VCSU sophomore was one of 100 students from across the nation named a Cyber FastTrack finalist who received a full scholarship for advanced cyber skills training through the SANS Technology Institute.
- The State Board of Higher Education approved an 18-credit graduate certificate program through NDSU for teachers in Computer Science Education. New emphasis has been placed on NDSU's Cybersecurity Education PhD program, and both NDSU and BSC were designated as Centers of Academic Excellence in Cyber Defense by NSA and Homeland Security.
- At the end of the fiscal year, EduTech had provided dozens of training sessions for more than 2100 participants focused on computer science and cybersecurity, including NICERC, Code.org and Minecraft in Education Workshops.

Additional milestones in the EduTech arena included:

Statewide Longitudinal Data System (SLDS) provides secure reports for districts to dig deeper into their accountability results: viewing district, school, grade level and student level data. During 2018-2019, EduTech partnered with DPI to provide regional SLDS training in the fall and spring for the schools that are designated as Targeted and Comprehensive

Schools. ESSA accountability reports within SLDS benefit school districts by allowing districts to communicate to stakeholders progress being made toward student success.

A Choice Ready dashboard was deployed in 2018 for accountability for both the 2017-18 and 2018-19 school year. Aligning with the ND PK-12 Strategic Vision Framework, the dashboard is a tool to assist educators to ensure all students successfully depart high school possessing the essential skills necessary to be ready for post-secondary, workforce, or military.

eTranscript: EduTech supports eTranscript, which provides school leaders and counselors the ability to monitor progress toward state scholarships and assist students in applying for the state scholarships. EduTech oversees and supports the North Dakota EdPortal, enabling parent and student access to eTranscript to view, request, or send transcripts to higher education institutions, as well as apply/monitor progress to North Dakota colleges and universities as well as CTE Scholarships. New features this past year include the ability for students to apply to an institution for early entry/dual credit and for first year college enrollment.

PowerSchool: The state Student Information System is required for use by all K-12 schools. This past year new implementations occurred at Fort Yates Middle School and Dakota Boys and Girls Ranch. An additional vertical reporting project, the MIS03 licensed personnel report, was launched as a pilot with seven school districts. MIS03 Data Cleanup training was completed state-wide for all districts/schools that wished to participate in the vertical reporting of teacher data for the 2019-2020 school year. As part of ongoing training and support, a total of 97 trainings were conducted and 5,700 support tickets closed.

While the North Dakota Center for Distance Education was transferred to Career and Technical Education during the 66th Legislative Assembly and is no longer part of NDIT, fiscal year accomplishments included completing its AdvancED accreditation engagement review and becoming fully accredited for another 5-year cycle. NDCDE also fully implemented an online teacher training and mentoring program redesign for new online instructors. Five additional SmartLabs were also installed in ND schools for a total of 19 statewide. In total, NDCDE experienced a 23.6% increase in online enrollments from the previous year, for a total of 5,359; graduation rates increased 60% from the previous year.

Internal Service Delivery, Automation and Cross-agency Collaboration

Significant outreach to agency clients and partnerships on a variety of projects resulted in several notable milestones and accomplishments:

Department of Financial Institutions Success Story

NDIT worked with the Department of Financial Institutions to reinvent two heavily paper-based, manual processes - consumer complaints and loan applications - using a low-code solution.

Complaints regarding financial institutions

The goal of the project was to reinvent the DFI process for citizens who needed to file complaints against a lending institution. Prior to the new platform, a complaint would be delivered via email to someone at DFI. The email would be mixed with other emails and would potentially take several days to be read and responded to. With the new platform, a complaint is immediately routed to the appropriate individual at DFI - based upon type of complaint - the citizen is alerted in real time that their complaint was delivered and DFI is able to take immediate steps with the lending institution. In addition, analytics are automatically created to inform DFI of trends in terms of institutions receiving a significant number of complaints as well as the type of complaints. This enables DFI to be more proactive and take actions to reduce and eliminate problems as well as resolve issues more quickly.

Loan applications

The goal of the project was to streamline loan applications. The original loan process required approximately 3 hours of time for the requestor to complete an application and then 1 week for the financial institution to respond to the request. With the new platform, once the requestor has completed the application, it is immediately available to the financial institution and the requestor receives a response in minutes.

Additional metrics and milestones in the service automation and delivery arena include:

- 30 people trained in Agile
- 40 people trained in Dynamics
- Low code platform saved 60% in development costs of traditional development
- Cost savings using DFI staff to make changes that do not require IT
- 1 month to deployment vs 3 months using traditional development

North Dakota's Online Presence

The digital services team expanded the [State Website Platform](#) to more than 40 websites, with numerous others in the queue for 2019 - 2020. This standard, unified approach provides modern, secure and affordable websites to agencies and enables enterprise cost-sharing to reduce unnecessary spending.

Cloud Strategy

With regards to the state's cloud strategy, adoption as a percentage of all infrastructure is at 16%. NDIT has also enabled and deployed Office 365 to over 8,000 users which provided updates in current technology as well as access to new and improved collaboration tools. Continued focus on cloud technologies is also enabling an improved security posture. NDIT also hosted workshops introducing team members to artificial intelligence, cognitive services as well as data analytics tools as we continue to focus on driving business value for state agencies and embracing emerging technologies for a variety of solutions.

Broadband Speed and Connectivity

Broadband in the 21st century is akin to electricity in the 20th century. According to the [North Dakota 2019 Broadband Plan](#), whether meeting consumer or business needs, it is imperative to successfully navigate today's digital world. As critical infrastructure, high-speed and affordable broadband is required to meet consumer expectations for streaming, communication, business and entertainment needs, and to support expansion of the Internet of Things as well as our growing leadership in energy, the UAS industry and precision agriculture.

North Dakota continues to lead the nation in broadband speed and connectivity, with 92% of North Dakotans able to access high speed Internet according to a [2019 Q2 BroadbandNow report](#).

The Federal Communications Commission (FCC) standard for availability is defined as 25 Mbps download and 3 Mbps upload (25/3) and today more than 75% of North Dakotans already have access to Gigabit broadband delivered in more than 325 communities (TechND.org - state of technology 2019). As we look to close the gap for the unserved and underserved throughout the state, our objective is Gigabit connectivity versus the national standards established by the FCC. The state's continued focus on expanding broadband speed and rural coverage will make a positive economic impact as we build on our reputation as the [Crown Jewel of the Midwest](#) with our focus on 21st century infrastructure.

Project Management

The NDIT Project Portfolio Management Office (PPMO) deployed an enterprise version of Microsoft's Project Online system to gain improved transparency into the IT project portfolio, to increase the quantity and availability of project information, and to streamline processes relating to the regular project reporting cadence.

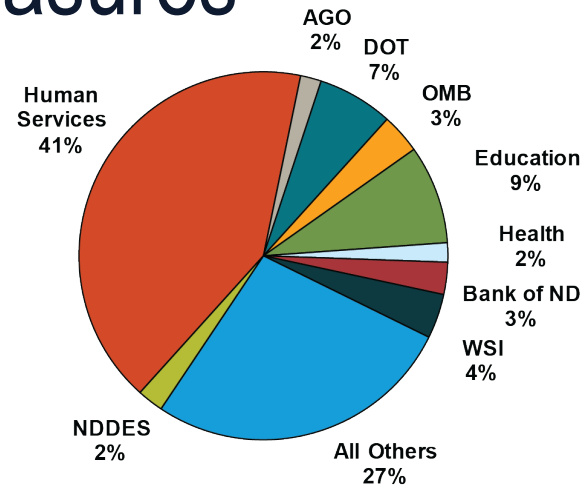
Project Online is a project management solution hosted by Microsoft through Office 365. The PPMO is leveraging this solution to plan, monitor, track, and report on project data across multiple portfolios of work. Project data that is stored in the system enables the PPMO to analyze cost, schedule, issue, risk, demand, and other project information in ways that was previously unable to be done when project information was collected through manual efforts and disparate project files.

2018-2019 Financial Measures

Revenue By Department

Fiscal Year 2019

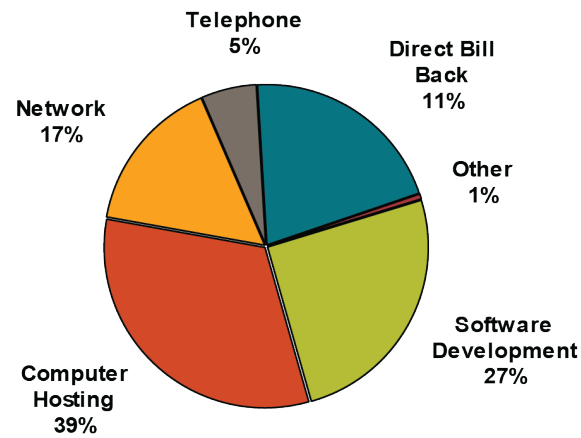
Total Billing \$64,861,264



NDIT Revenue By Service

Fiscal Year 2019

Total Billing: \$64,861,264



Rate Comparison and Trends

IT Support

Enterprise	Location	Developers
ITD	State of ND	76 - 132
Applied Engineering	Bismarck, ND	105 - 115
Infotekka	Albuquerque, NM	106 - 128
Connvertex Technologies	South Jordan, UT	80 - 90
Nexus Innovations	Bismarck, ND	105 - 125
Agency MABU	Bismarck, ND	75 - 80
Prominent Technology	Bismarck, ND	92 - 122
Bpro, Inc	Pierre, SD	80 - 90
Integration Architects	Minneapolis, MN	107 - 117
QA Technologies	Omaha, NE	82 - 95
TEK Systems	Atlanta, GA	92 - 110

Rates as of July 2019

	North Dakota	South Dakota	Montana	Minnesota
	ITD	BIT	ITSD	MNIT
Staffing				
Senior Analyst	114.00/hr	80.00/hr	120.00/hr	95.70/hr
Server Administrator	99.0/hr	**	120.00/hr	95.70/hr

Costs vary based on Statement of Work *DBA and Server Admin. Rates included in info Management fee below

Central Computer CPU				
Batch CPU	.64	.64	5.05/user id	.02
CICS CPU	.64	.64	5.05/user id	.05
ADABAS CPU	.64	.64	5.05/user id	.01
TSO CPU	.64	.64	5.05/user id	1.21

*SD also charges \$.02 per 1000 I/Os

**MN uses service units to bill rather than CPU seconds. This is because they run three different processors.

Network Fees				
Technology Fee*	66.25	98.25	65.07	109.60
Info / Enterprise Mgmt Fee*	included	55		
Desktop Support	100.00/PC/Mo	In Tech Fee <small>(Excludes Hardware)</small>	92.38 / Mo.	134.60/Mo.

DSL Service	Cost + 175.00	Actual	Actual	148.16
ETS-10 (10mbps bandwidth)	850.00	Actual	Actual	884.12
*Per domain account				
Telephone Fees				
Telephone Line	23.00 - VoIP	20.00 - Analog	25.47 - VoIP	25.50 - VoIP
Voicemail (unlimited)	5.00	6.00		included
(3 minute limit)			4.64	
(per additional minute)			1.43	
Long Distance	North Dakota	South Dakota	Montana	Minnesota
In-State	.045	.08	.07	.069
Out-of-State	.045	.08	.07	.069
800 Service	.05	.08	.08	.048

Service Rate Trends

	Jul '14	Jul '15	Jul '16	Jul '17	Jul '18	Jul '19
Software Development						
Senior Analyst	94.00	105.00	105.00	114.00	114.00	114.00
System Analyst II	75.00	75.00	81.00	81.00	85.00	
Programmer	69.00	73.00	73.00	76.00	76.00	76.00

Central Computer CPU						
Batch CPU	.58	.64	.64	.64	.64	.64
CICS CPU	.58	.64	.64	.64	.64	.64
ADABAS CPU	.58	.64	.64	.64	.64	.64
TSO CPU	.58	.64	.64	.64	.64	.64
Network Fees						
Device Fee	49.50	59.00	59.00	64.00	64.00	66.25
ETS-10	765.00	765.00	765.00	850.00	850.00	850.00
*Base connectivity became an ETS-10 in July 2017						
Telephone Fees						
Telephone Line	20.00	20.00	20.00	20.00	20.00	23.00
Speaker/Display	3.00	3.00	3.00	3.00	3.00	0.00
Voicemail (unlimited)	5.00	5.00	5.00	5.00	5.00	5.00
Long Distance						
In-State	.06	.05	.045	.045	.045	.045
Out-of-State	.06	.05	.045	.045	.045	.045
800 Service	.07	.05	.05	.05	.05	.05

Financial Statements

Statement of Net Assets June 30, 2018 & 2017

ASSETS		FY 2018	FY 2017
Current Assets:			
	Cash Deposits at BND	13,992,510	9,172,271
	Intergovernmental Receivables	513,748	442,435
	Accounts Receivable	130,792	134,093
	Due From Other Funds	6,136,597	5,460,946
	Prepaid Items	<u>3,512,774</u>	<u>3,439,655</u>
	Total Current Assets	24,286,421	18,649,400
Noncurrent Assets:			
	Building & Equipment - Net	<u>4,214,580</u>	<u>7,188,990</u>
	Total Non-current Assets	<u>4,214,580</u>	<u>7,188,990</u>
Total Assets		28,501,001	25,838,390
DEFERRED OUTFLOWS OF RESOURCES			
	Derived from Pensions	<u>16,306,473</u>	5,940,922

TOTAL ASSETS & DEFERRED OUTFLOWS		44,807,474	31,779,312
LIABILITIES			
Current Liabilities:			
	Accrued Payroll	2,332,900	2,519,826
	Accounts Payable	1,302,004	3,729
	Due to Other Funds	447,798	<u>631,841</u>
	Total Current Liabilities	4,082,702	3,155,396
Noncurrent Liabilities:			
	Compensated Absences Payable	2,239,843	2,228,973
	Net Pension Liability	<u>31,693,120</u>	<u>20,349,262</u>
	Total Non-current Liabilities	<u>35,416,833</u>	<u>22,578,235</u>
Total Liabilities		39,499,535	25,733,631
DEFERRED INFLOWS OF RESOURCES			
	Derived from Pensions	1,591,237	1,635,077
NET POSITION			
	Invested in Capitol Assets, Net of Related Debt	4,214,580	7,188,990

	Unrestricted	<u>(497,878)</u>	<u>(2,778,386)</u>
	Total Net Position	<u>3,716,702</u>	<u>4,410,604</u>
TOTAL LIABILITIES, DEFERRED INFLOWS & NET POSITION		44,807,474	31,779,312

Statement of Revenues, Expenses, and Changes in Fund Net Position for years ending June 30th, 2018 & 2017

	FY 2018	FY 2019
OPERATING REVENUE:		
Sales and Services	62,619,324	58,921,787
OPERATING EXPENSES:		
Salaries and Benefits	31,250,062	29,815,379
Operating	28,603,871	30,072,145
Depreciation	<u>4,280,005</u>	<u>5,259,522</u>
TOTAL OPERATING EXPENSES	<u>64,133,938</u>	<u>65,147,046</u>
OPERATING INCOME (LOSS)	(1,514,614)	(6,225,259)
NON-OPERATING REVENUES (EXPENSES):		
Loss on Sale of Capital Assets	<u>0</u>	<u>(34,299)</u>

TOTAL NON-OPERATING REVENUE (EXPENSES)	<u>(0)</u>	<u>(34,299)</u>
INCOME (LOSS) BEFORE CONTRIBUTIONS AND TRANSFERS	(1,514,614)	(6,259,558)
TOTAL NET POSITION-BEGINNING OF YEAR	<u>5,231,316</u>	<u>11,490,874</u>
TOTAL NET POSITION-END OF YEAR	3,716,702	5,231,316

Performance Measures

IT Service Management Metrics

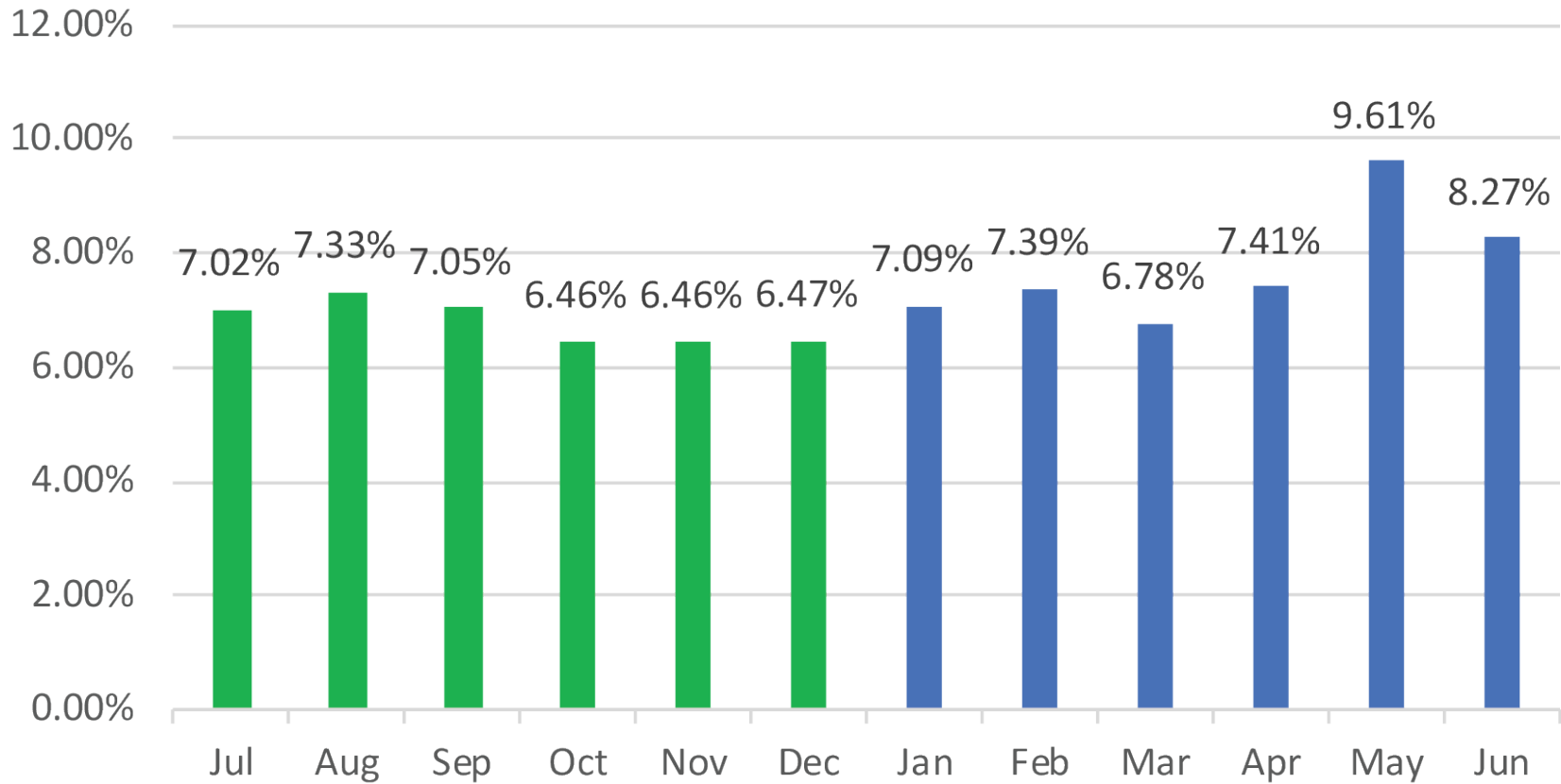
NDIT's Service Desk is the "Single Point of Contact" for providing customers with advice, guidance, and rapid restoration of services. This past year included 81,496 incidents.

HR and Workforce Development

- 35 Different Requisitions/Positions
- 99 Interviews
- 38 Offers
- 27 Acceptances
- 9.31 Average Size of Applicant Pool
- 56% Average Amount of Qualified Applicants

Mature HR practices and a well-thought-out workforce development strategy are key to recruiting and retaining talented staff in a competitive economy. This is especially true for IT, where specialties like cybersecurity have a zero percent unemployment rate. Over the last year, we increased our focus on staff development through efforts like our Amplify Mentorship Program in addition to Leadership Everywhere classes and Business Process Improvement. Our workforce expanded with 96 IT employees transferred to NDIT, offering more opportunities to work as one.

Turnover July 2018 - June 2019



HRMS Statewide Dashboard

Trending data on important metrics, such as FTE count, years of service, and turnover rate can be viewed on the [HRMS Statewide Dashboard](#). When viewing the dashboard, select "ITD" from the dropdown menu to see NDIT's metrics and a comparison against the state's overall metrics.

Records Management

NDIT has implemented records management programs in 100 state and local government agencies, higher education institutions, boards, and commissions. Last year, state agencies, local government offices, and higher education institutions disposed of 12,480 cubic feet of records that satisfied their retention requirements. This savings in storage space, equipment, and related salaries resulted in a cost avoidance of \$4,650,442. For the entities reporting a volume of electronic records, 26.4 TB were disposed for an annual cost avoidance of \$48,696.