

NORTH  
**Dakota**

Be Legendary.™

Information Technology

Team North Dakota

**EMPOWER PEOPLE  
IMPROVE LIVES  
INSPIRE SUCCESS**

Senate Appropriations Committee  
January 6, 2021 | Roughrider Room  
Bismarck, ND

Empower People | Improve Lives | Inspire Success



# LEGISLATIVE TESTIMONY REQUESTS FOR BUDGET HEARING

6 January @ 14:30pm

1. Cite the North Dakota Century Code chapter(s) associated with the agency and list its major statutory responsibilities.
2. Explain the purpose of the agency's various divisions/programs - Attach organizational chart
3. Report any financial audit findings included in the most recent audit of your department or institution and action taken to address each finding.
4. Discuss current biennium accomplishments and challenges and next biennium goals and plans
5. Compare the agency's request/recommendation totals, including full-time equivalent (FTE) positions, for the next biennium compared to the current biennium.
6. Explain the funding included in each program/line item either in total or by division depending on the size of the agency:
  - a. Amounts included in the base budget and their purpose and use; and
  - b. Amounts included in the request/recommendation and justification for the change from the base budget.Discuss changes relating to:  
(1) Salaries and wages; (2) Operating expenses; (3) Capital assets; (4) Grants;  
(5) Any special line items; (6) Estimated income - Special funds; (7) Estimated income - Federal funds; (8) General fund; and (9) FTE.

7. Discuss the purpose and use of any one-time funding items for the current biennium.
8. Identify and justify the need for any one-time funding being requested/recommended.
9. Discuss agency collections that are deposited in the general fund or a special fund, and any anticipated changes from 2019 legislative session estimates during the 2019-21 biennium and estimated changes for the 2021-23 biennium.
10. Discuss the need for any other sections that are included or are requested/recommended to be included in the agency appropriation bill.
11. Discuss any other bills being considered by the Legislative Assembly and their potential budgetary impact on the agency.
12. Discuss the impact of any budget changes made to meet the Governor's budget guidelines.
13. Provide a one-page itemized listing of the changes your agency is requesting the committee to make to the executive recommendation.
14. Provide a comparison of your agency's optional adjustment requests to those recommended in the executive budget.
15. Identify the amount of federal funding available to your agency relating to the Coronavirus (COVID-19) pandemic, the actual amount spent, and for what purpose.
16. Provide additional information as necessary

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COURAGE

CURIOSITY

HUMILITY



# KEY MESSAGES

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# Key Messages

- IT Unification creates significant savings and advantages for the state
- Cyber security is a critical problem for the entire state and must continue to be addressed
- Ancient technology limits the state's ability to lower operational costs, attract and retain new North Dakota talent and innovate
- North Dakota IT put forth all efforts to aid agencies to fight COVID19
- The IT budget is relatively flat after normalizing

# NDIT Organizational Details

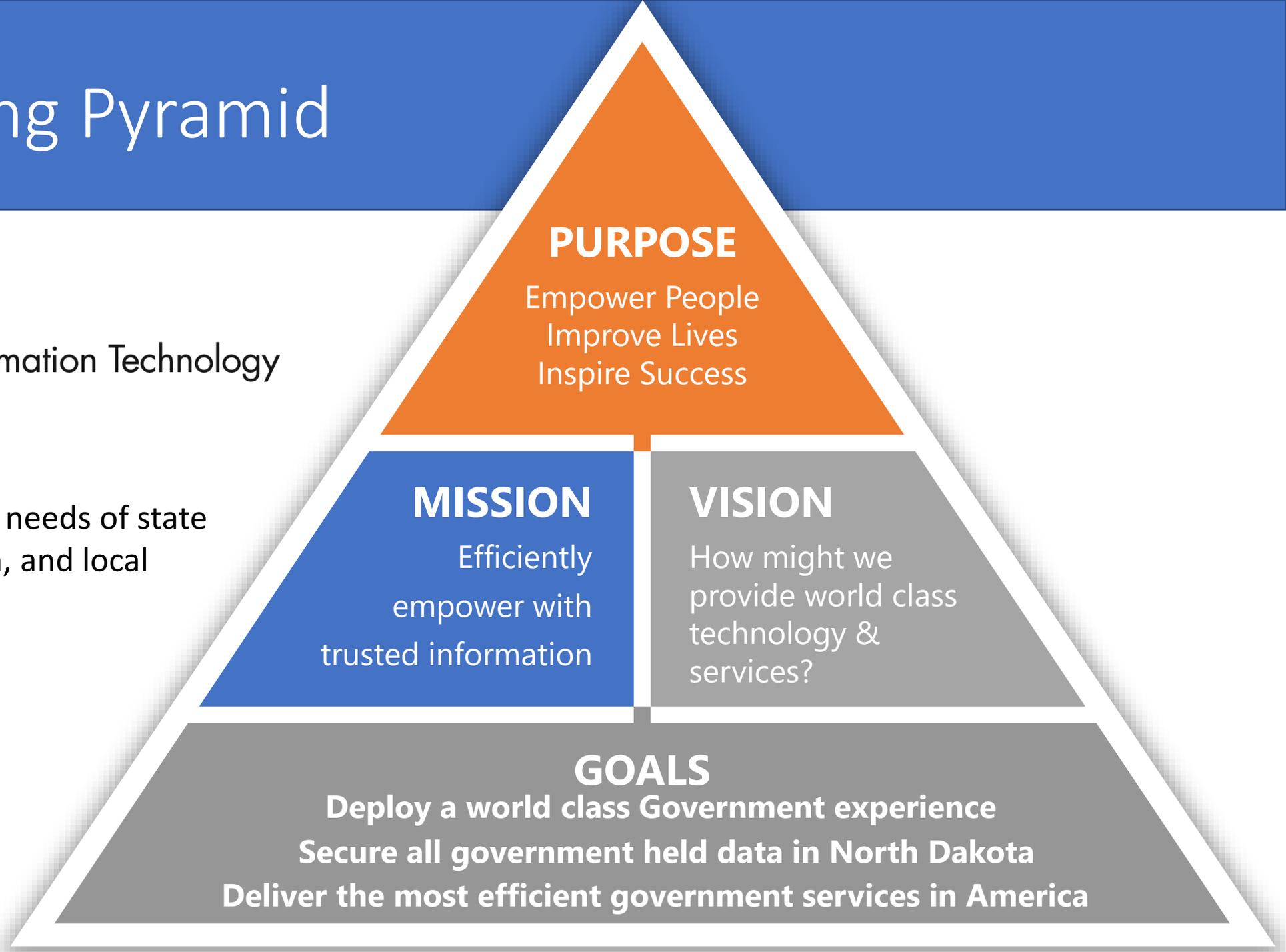
# North Dakota Information Technology

- NDCC Chapter 54-59
  - Information Technology
  - Statewide Longitudinal Data System (SLDS)
  - Health IT
  - State Information Technology Advisory Committee (SITAC)
- NDCC Chapter 54-46
  - Records Management
- NDCC Chapter 37-17.3-02
  - Establishes Statewide Interoperable Radio Network (SIRN)

# NDIT Guiding Pyramid



Serving the technology needs of state government, education, and local communities



## PURPOSE

- Empower People
- Improve Lives
- Inspire Success

## MISSION

Efficiently  
empower with  
trusted information

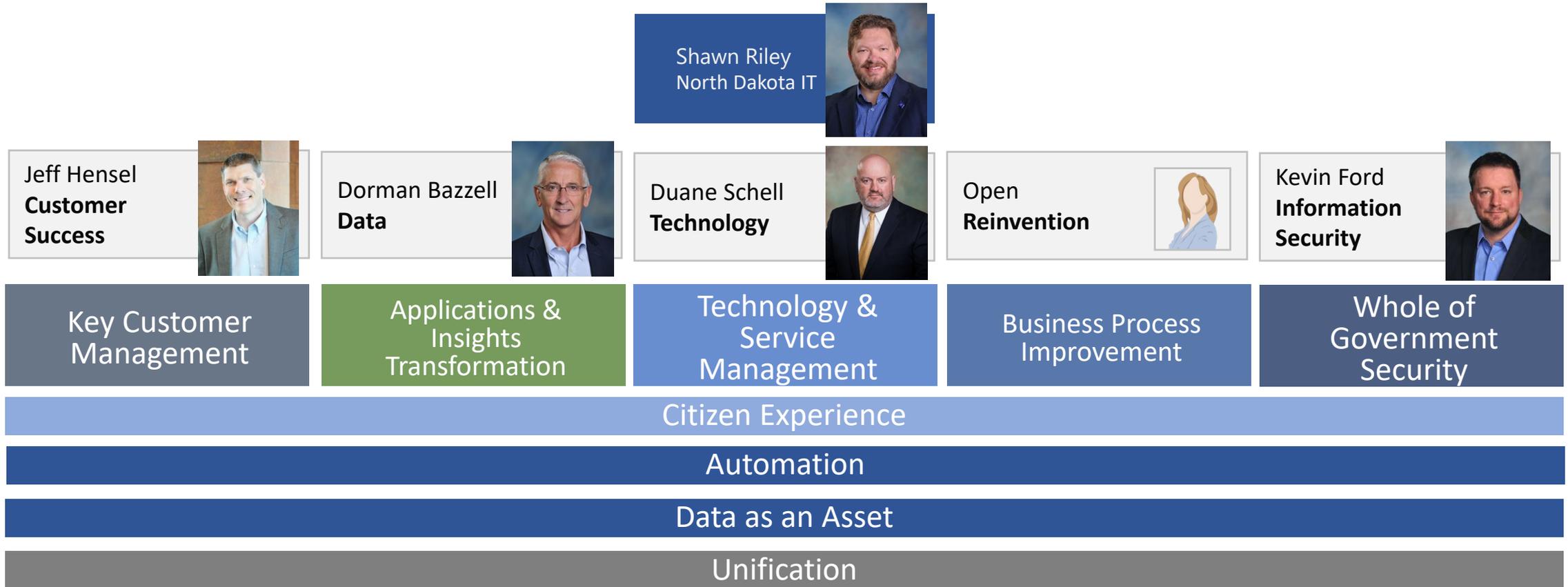
## VISION

How might we  
provide world class  
technology &  
services?

## GOALS

- Deploy a world class Government experience
- Secure all government held data in North Dakota
- Deliver the most efficient government services in America

# North Dakota Information Technology



NDIT Shared Service  
468 FTE

Full organization chart attached

# Current Biennium Overview

# Initiatives

**There was not a single major service area in NDIT that did not undergo some transformation (despite COVID19)**

- Unification
  - How we work being redefined
  - Culture / Reinvention
- Service Management
  - Help Desk, device management, inventory, configuration, etc.
- Software & Data Management
  - Citizen as a Platform, Data Lake, Data as an Asset
- Project Management
  - Project & Portfolio Process and toolset, Demand & Portfolio Managed
- Cyber Security
  - Whole of Government, K-20 Educated
- Automation
  - Artificial Intelligence

**ND "K-20W" Initiative:  
Every Student, Every School, Cyber Educated**



**Cyber education for the educators across the state**



# External Threats



North Dakota receives over **2.1 Billion attacks per year**<sup>1</sup> from external threats including:

- Nation States,
- Corporate Espionage, and
- Organized Crime Syndicates

Vast majority of attacks are managed through automated defenses, but 53K cyber events had to be handled by the team

1. Based on Sampling of 2020 Firewall logs from June 2020, August 2020, October 2020, and Last 30 days (as of December 20, 2020) - Logs available in appendix

# COVID19 Response

- \$8,250,000 in labor saved via automation in testing/tracing
- Over 7,200 state workers enabled to work from home in 48 hours
- New Security technologies deployed across government in days
- Work from home systems capacity increased by 2,000% in days
- Key website use increased 5,000% in days
- Massive technology changes to ensure government could continue to deliver services
- Unprecedented defense against increase in cyber attacks
- Hundreds of unplanned projects delivered

**\$60M+**

In Projects deployed (funded via CaresAct dollars) across state government to cover the impacts of COVID19

**~75 %**  
Percentage of state workers enabled to telework

**30K**

Hours of unpaid overtime worked by the IT teams in response to 2020 issues

# 2021-23 Objectives & Strategies

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# Unification



Citizen  
Focused

Growth  
Mindset

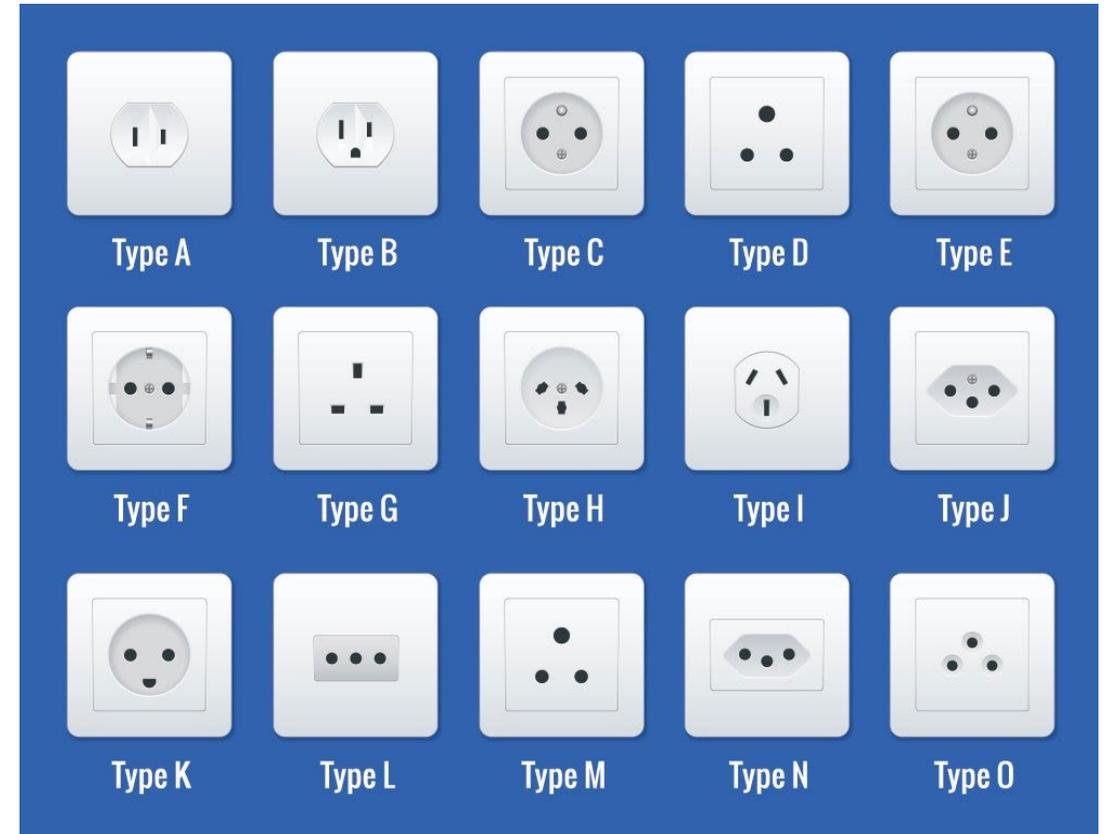
Leadership  
Everywhere

Work  
As One

Make A  
Difference

# Unification is foundational to success

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# Unification

Today's Technology  
in Exec Branch

37  
Agencies

Approximately:  
538.5  
Technology FTE

Jack of all trades  
everywhere with  
no backups

Redundancies  
Everywhere

No cohesive  
strategies

## Unification

- Substantial service improvements in DHS and DoT
  - Device turnover times reduced, throughput of services
  - \$4.7M in IT savings for DHS alone
  - \$1.2M in savings through the first 8 months across multiple agencies
  - Many redundant technologies eliminated
  - Set the stage for next levels of Unification
  - Significant cost avoidance and working towards lowering cost per unit of service
  - Economies of scale obtained

## 2021 Proposal

**Fully align 19 agencies IT structures (totaling 468 IT staff) with no new costs for unifying**

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# Cyber



Citizen  
Focused

Growth  
Mindset

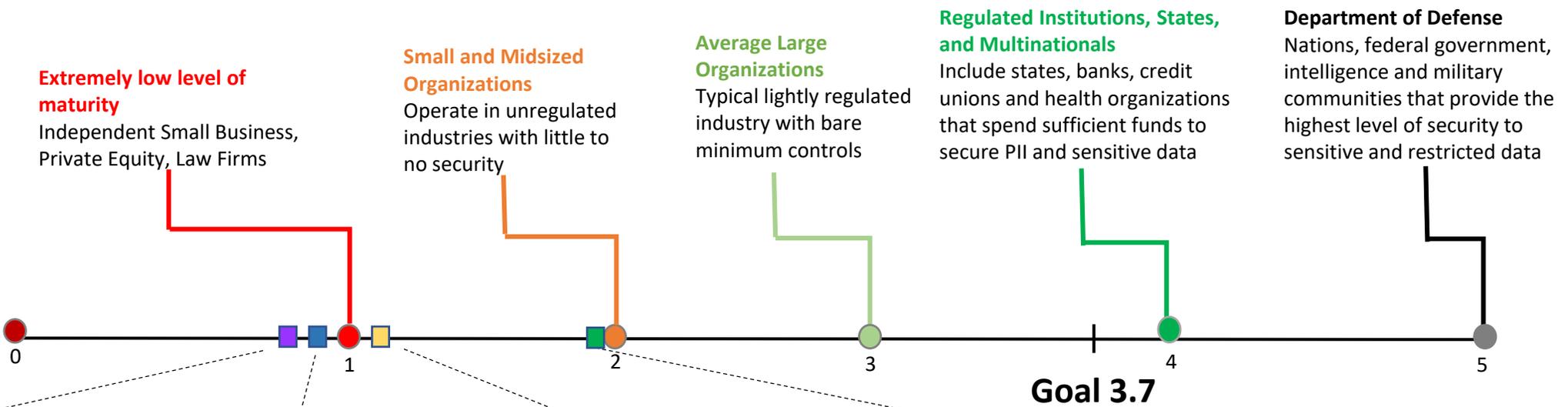
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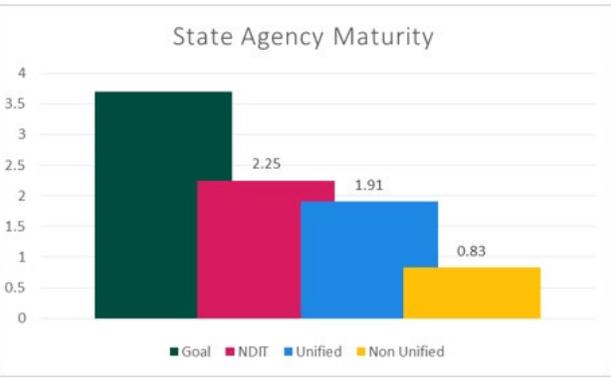
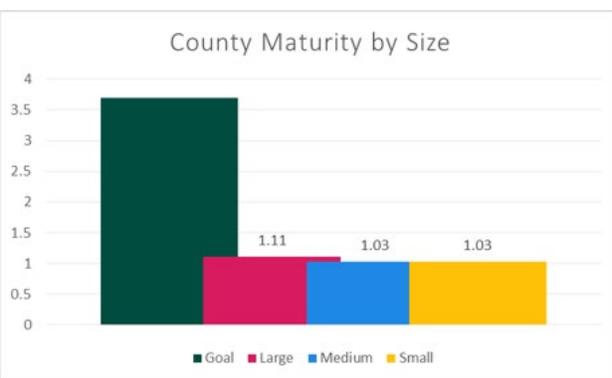
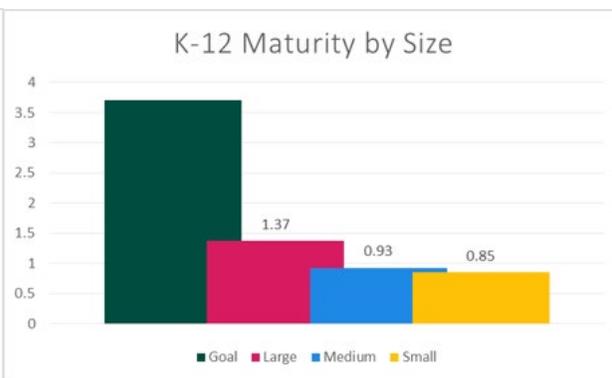
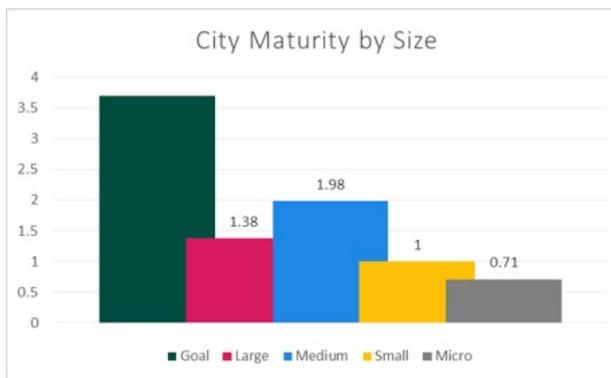
Make A  
Difference

# Cybersecurity Capabilities in North Dakota

42% overall participation rate (target 25%)



■ **Cities - 0.76** (97 Reporting Cities)  
■ **K12 - 0.97** (104 Reporting K12)  
■ **Counties - 1.05** (29 Reporting Counties)  
■ **State - 1.91** (ND Gov.)



# Cyber Proposal

Serving ~250K North Dakotans

## Funded Individually

Cost to State in tools and services for all government entities across North Dakota to obtain basic security functionality per Biennium

**\$413,882,000.22<sup>1</sup>**

The Cyber staff required would be

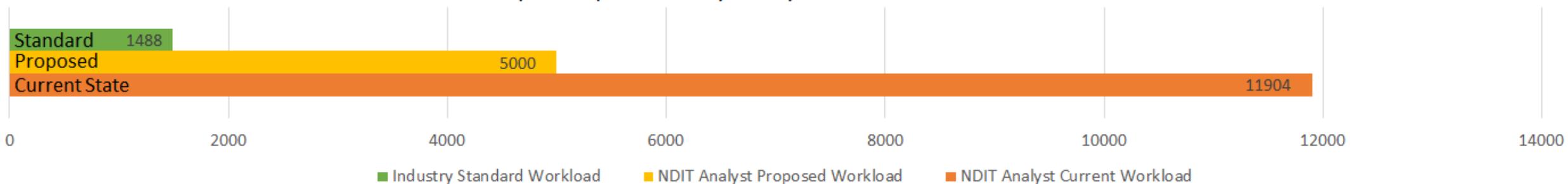
**6 times the total yearly number of Computer Science Graduates in the State<sup>2</sup>**

## Through the Shared Service

Allows the state's shared service to support whole of government cyber in technology and people

- Special fund \$25.8m in recurring technology costs
- Add 29 FTE to the North Dakota IT Cybersecurity Team bringing the total analysts to **50**
  - **More than 3x the Operational Efficiency of the Average Fortune 500 Company<sup>3</sup>**

Workload – Computers per Security Analyst



1. Based on Endpoint Detection and Response Toolset and Vulnerability Management Toolset quotes from 11/24/2020 for small government organizations (see Appendix) and industry average Security Analysts per endpoint from: Osterman Research - The Evolving State of Network Security, 2018, Cited by InfoSecurity group (September 2018). <https://www.infosecurity-magazine.com/news/security-staffing-low-in-midsized/>

2. Based on 152 bachelor's degrees in Computer Science per year from: Code.org North Dakota State Fact Sheet (2018). <https://code.org/advocacy/state-facts/ND>

3. Based on industry average of 1 analyst per 1,488 endpoints for large organizations documented in Osterman Research - The Evolving State of Network Security, 2018, Cited by InfoSecurity group (September 2018). <https://www.infosecurity-magazine.com/news/security-staffing-low-in-midsized/>

# HB 1064 – Proposed Legislation

18. May enter a memorandum of understanding with other state, local, or territorial governments of the United States for purposes of ensuring the confidentiality, availability, and integrity of state information systems and data, including consulting, developing cybersecurity strategy, prevention of cybersecurity incidents, and response strategies to cybersecurity incidents. The department may charge an amount equal to the cost of the services rendered by the department to all agencies that receive and expend moneys from other than the general fund.

19. May enter a mutual aid agreement with other state, local, tribal, or territorial governments of the United States agreeing to the reciprocal exchange of resources and services for mutual benefit of the parties related to cybersecurity efforts for the purposes of responding to or mitigating active cybersecurity incidents. The department may receive in-kind benefits that reduce cybersecurity risks to information technology or shall charge an amount equal to the cost of the services rendered by the department to all agencies that receive and expend moneys from other than the general fund.

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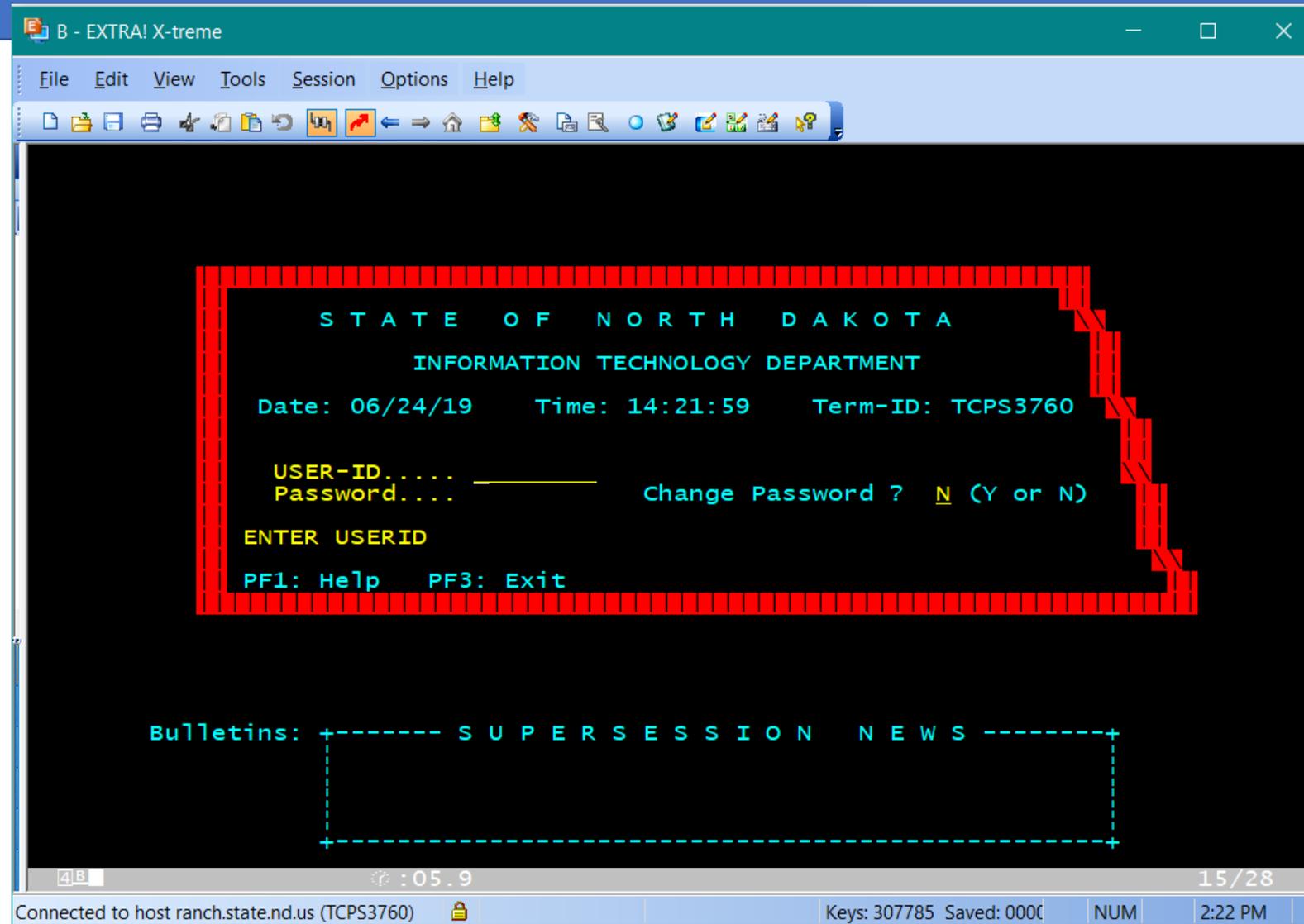
CURIOSITY

HUMILITY

# Eliminating Ancient Technology



# Welcome to the past



# A challenge with technology

This may be less expensive up front....



But it is also far more dangerous and far less efficient than today's high-tech farm equipment



*Behrens*

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WE HAVE  
MADE THESE  
DECISIONS IN  
OUR OWN  
LIVES

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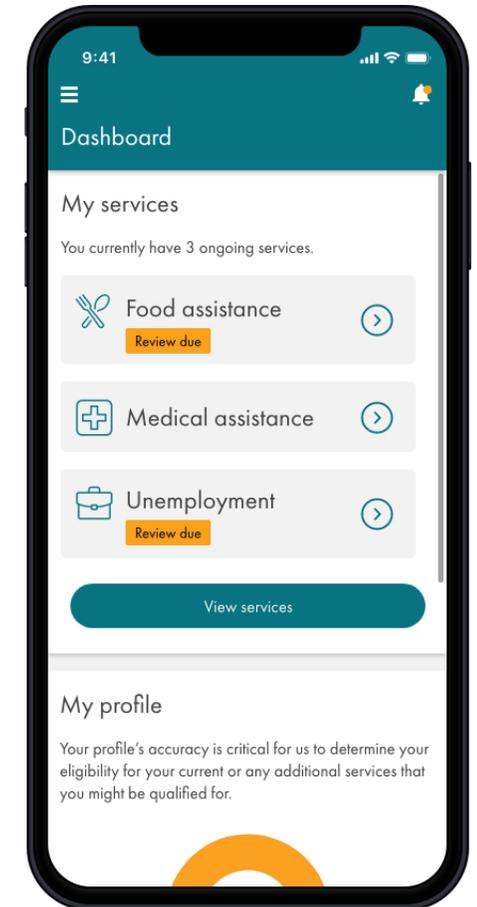
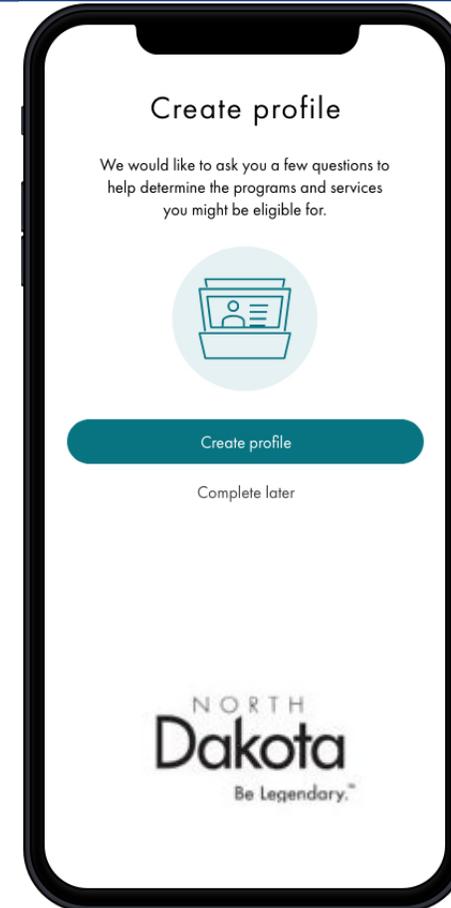
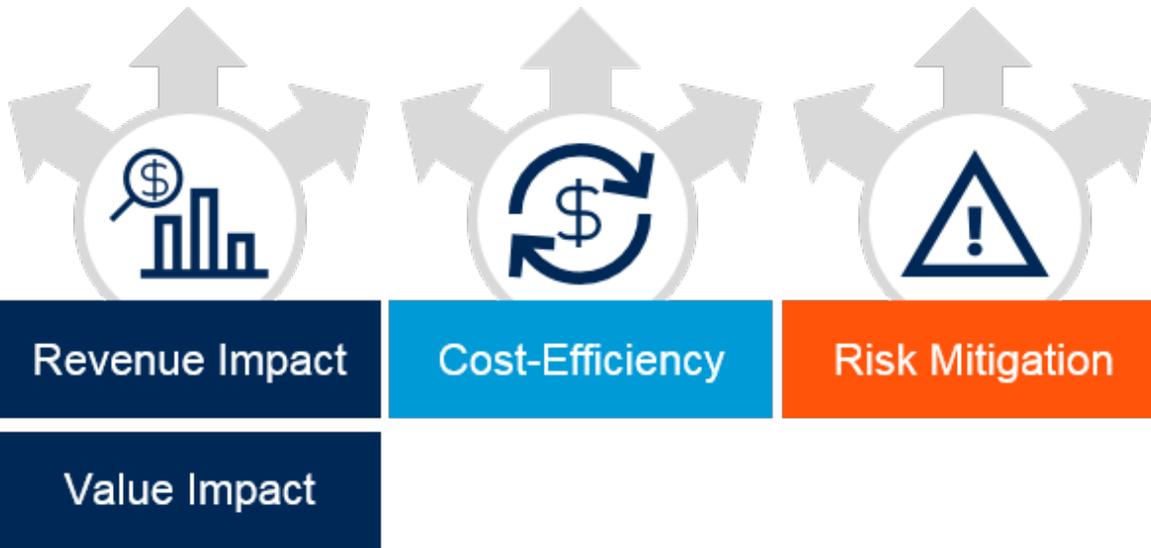
TRANSFORMING  
OUR ABILITY TO  
DO MORE IN FAR  
LESS TIME...

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# Leveraging New Technology

The world spends money on IT in order to lower the costs of operations and to better serve customers & citizens



# Budget Breakdown

# 2019-2021 Program Budget

Program	FTE	General Funds	Special Funds	Federal Funds	Total
NDIT Operations	355.0	\$ 14,810,948	\$ 174,670,855	\$ 1,503,179	\$ 190,984,982
Public Safety - (E911/SIRN)	1.0	-	132,330,000	-	132,330,000
K-12 Network	4.0	5,077,970	90,000	-	5,167,970
Geographic Information System	1.0	977,629	1,150,000	75,000	2,202,629
Statewide Longitudinal Data System	7.0	4,387,145	-	-	4,387,145
EduTech	30.0	3,311,619	6,334,154	-	9,645,773
Health Information Technology	4.0	-	47,934,279	500,000	48,434,279
<b>Total</b>	<b>402.0</b>	<b>\$ 28,565,311</b>	<b>\$ 362,509,288</b>	<b>\$ 2,078,179</b>	<b>\$ 393,152,778</b>

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# 2021-2023 SB2021 Base Budget

Program	FTE Chg	General Funds	Special Funds	Federal Funds	Total
NDIT Operations		\$ 3,410,948	\$ 170,670,855	\$ 1,503,179	\$ 175,584,982
Public Safety - (E911/SIRN)		-	12,330,000	-	12,330,000
K-12 Network		5,077,970	90,000	-	5,167,970
Geographic Information System		977,629	-	75,000	1,052,629
Statewide Longitudinal Data System		4,387,145	-	-	4,387,145
EduTech		3,311,619	6,334,154	-	9,645,773
Health Information Technology		-	4,379,146	500,000	4,879,146
<b>Total</b>	-	<b>\$ 17,165,311</b>	<b>\$ 193,804,155</b>	<b>\$ 2,078,179</b>	<b>\$ 213,047,645</b>

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## 2021-2023 Executive Budget Changes to SB2021 Base Budget

Program	FTE Chg	General Funds	Special Funds	Federal Funds	Total
NDIT Operations	95.0	\$ (252,675)	\$ 58,015,104	\$ (1,503,179)	\$ 56,259,250
Public Safety - (E911/SIRN)	-	1,858,240	8,074	-	1,866,314
K-12 Network	-	(480,761)	-	-	(480,761)
Geographic Information System	-	61,338	-	(9,321)	52,017
Statewide Longitudinal Data System	-	(384,185)	-	500,000	115,815
EduTech	-	(242,429)	(171,296)	500,000	86,275
Health Information Technology	-	100,000	(1,644,252)	5,831,472	4,287,220
<b>Total</b>	95.0	\$ 659,528	\$ 56,207,630	\$ 5,318,972	\$ 62,186,130

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# 2021-2023 Executive Budget

Program	FTE	General Funds	Special Funds	Federal Funds	Total
NDIT Operations	450.0	\$ 3,158,273	\$ 228,685,959	\$ -	\$ 231,844,232
Public Safety - (E911/SIRN)	1.0	1,858,240	12,338,074	-	14,196,314
K-12 Network	4.0	4,597,209	90,000	-	4,687,209
Geographic Information System	1.0	1,038,967	-	65,679	1,104,646
Statewide Longitudinal Data System	7.0	4,002,960	-	500,000	4,502,960
EduTech	30.0	3,069,190	6,162,858	500,000	9,732,048
Health Information Technology	4.0	100,000	2,734,894	6,331,472	9,166,366
<b>Total</b>	<b>497.0</b>	<b>\$ 17,824,839</b>	<b>\$ 250,011,785</b>	<b>\$ 7,397,151</b>	<b>\$ 275,233,775</b>

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# CARES Funding



# CARES Act Funding Summary – May 2020

	Description	Original Allocation From CARES Act	Actual CARES Act Spend	2021-2023 Operational Tail*
Digital Government	Digital government. This funding will be used to establish an enterprise level call center, automation of manual processes to improve workflow, execute a Unified Data Platform for whole of government, and conduct an assessment to support working differently as a result of COVID-19.	\$26,750,000	\$12,686,237	\$0
Cyber Security	Cyber Security. This funding will be used to combat an increase in security incidents directly related to COVID-19. Resources needed include contractor support, additional toolsets and licenses, staff training and on-call third party for large scale incidents.	\$17,000,000	\$28,042,213	\$5,600,000
Telework	Telework. This funding will be used for an upgrade in Microsoft 365, and equipment such as laptops, headsets, network and server hardware to meet the additional capacity needs of the new telework environment.	\$23,868,226	\$25,223,588	\$0
Total		\$67,618,226	\$65,952,038	\$5,600,000

# Digital Government

	Description	Original Allocation From CARES Act	Actual CARES Act Spend	2021-2023 Operational Tail*
Call Center Solution	Resources to establish an enterprise call center, replacing individualized, agency specific ones.	\$5,250,000	\$2,071,334	\$0
Automation Low /No Code	Process automation to improve citizen experience, improve business workflow, and provide efficiencies.	\$12,000,000	\$6,261,671**	\$0
Digital Services	Enhance citizen interaction with government	\$3,500,000	\$832,634	\$0
Covid-19 centered Unified Data Platform/Analytics	Reduce/Eliminate manual data collection	\$6,000,000	\$3,520,598	\$0
Total		<b>\$26,750,000</b>	<b>\$12,686,237</b>	<b>\$0</b>

\*Operational tail will be individual agency's choice or is included in existing service fees. No new money is required.

\*\*This includes a \$5M turnback of appropriation in November 2020.

# Cyber Security

	Description	Original Allocation From CARES Act	Actual CARES Act Spend	2021-2023 Operational Tail*
Professional Services	Tool Integrations and implementation, Security Engineers, TPCRM, DLP, CASB.	\$5,100,000	\$1,969,221	\$0
Tools (and Training)	XSOAR, Auto Focus, Integrations, Lab Equipment, Threat Hunting, Phishing Training, Vulnerability Management, Security Outreach, Third Party Risk Management	\$6,400,000	\$14,748,826	\$5,600,000
Staff Augmentation	Support for cyber operations teams.	\$3,500,000	\$11,324,166	\$0
3 <sup>rd</sup> Party Incident Response Teams	Provides for investigation resources, and for third-party risk management	\$2,000,000	Moved to Cyber Tools grouping above	\$0
<b>Total</b>		<b>\$17,000,000</b>	<b>\$28,042,213</b>	<b>\$5,600,000</b>

\*Operational Tail is part of the CyberSecurity budget request

# Telework

	Description	Original Allocation From CARES Act	Actual CARES Act Spend	2021-2023 Operational Tail*
Equipment	Desktop Replacement; Conference Room upgrades; Network and server expansion; Hardware for system admins	\$10,518,226	\$8,833,295	\$0
Professional Services	Business Partner Support, Enterprise Service Management, Teams Voice Deployment	\$3,997,800	\$4,891,188	\$0
Software Licenses & Training	Remote Support Toolsets, PowerBI Premium Platform, Azure AD Premium, Virtual Whiteboard, eSignature, Identity Management	\$3,202,200	\$4,353,480	\$0
M365 E5 Productivity Suite	Licensing expansion enabling mobile/telework voice, improved document management, and improved data analytics capabilities	\$1,650,000	\$1,650,000	\$0
Continuity of Government	Resources for assessments to support working differently as a result of COVID-19.	\$4,500,000	\$5,495,625	\$0
<b>Total</b>		<b>\$23,868,226</b>	<b>\$25,223,588</b>	<b>\$0</b>

\*Operational tail will be individual agency's choice or is included in existing service fees. No new money is required.

# 2019-2021 Executive Budget - Operations

Program - NDIT Operations	FTE	General Funds	Special Funds	Federal Funds	Total
NDIT Operations - 2019-21	355.0	\$ 14,810,948	\$ 174,670,855	\$ 1,503,179	\$ 190,984,982
One-Time Funding Reductions		(11,400,000)	(4,000,000)	-	(15,400,000)
NDIT Operations Budget Changes		(341,094)	2,933,413	(1,503,179)	1,089,140
Cybersecurity (GF and SF)	29.0	-	20,219,157	-	20,219,157
IT Shared Services	66.0	-	31,933,032	-	31,933,032
Compensation Package		88,419	2,929,502	-	3,017,921
<b>Total Executive Budget - NDIT Operations</b>	<b>450.0</b>	<b>\$ 3,158,273</b>	<b>\$ 228,685,959</b>	<b>\$ -</b>	<b>\$ 231,844,232</b>

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# Information Technology Operations

## IT Functions and Service Delivery Areas

Customer Success Management

Business Intelligence

Enterprise Architecture

Business Operations Automation

Security Operations

EduTech

Data Science

Service Management

Systems & Procedures

Security Policy

Health Information Network

Programming / Development

Cloud & DC Services

Organizational Change Management

Threat Intelligence

Enterprise Applications

Information Management

Transport (Net/Radio/Voice)

Project / Portfolio Management

Strategic Sec Implementation

Business Applications

Information Governance

Internet of Things

End User Compute

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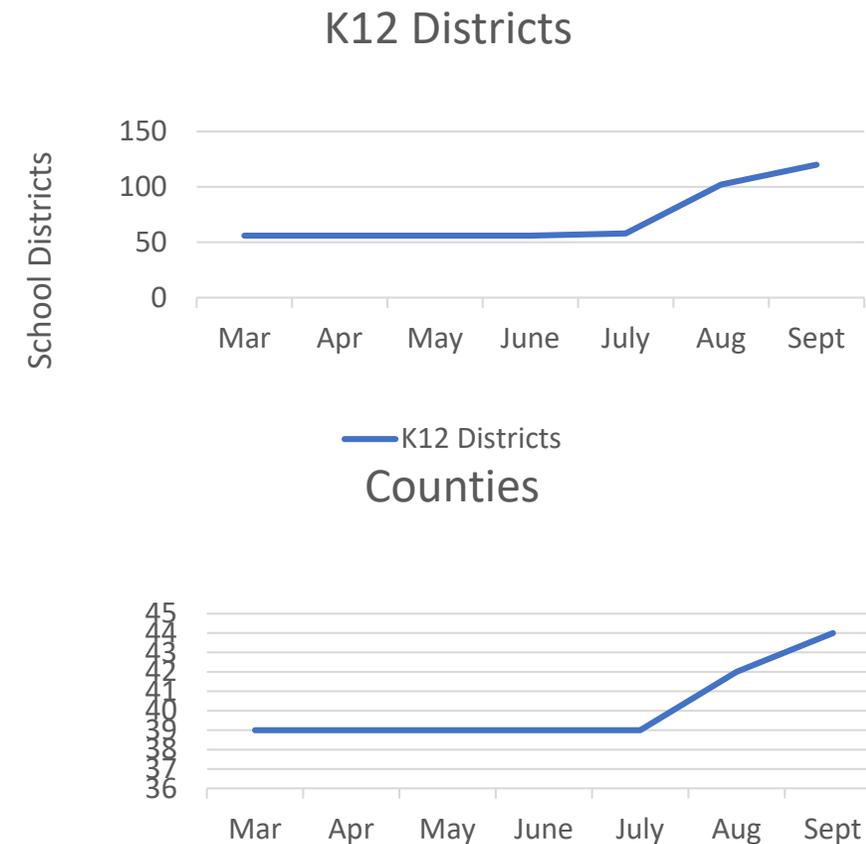
HUMILITY

# Overview of State-Wide CyberSecurity



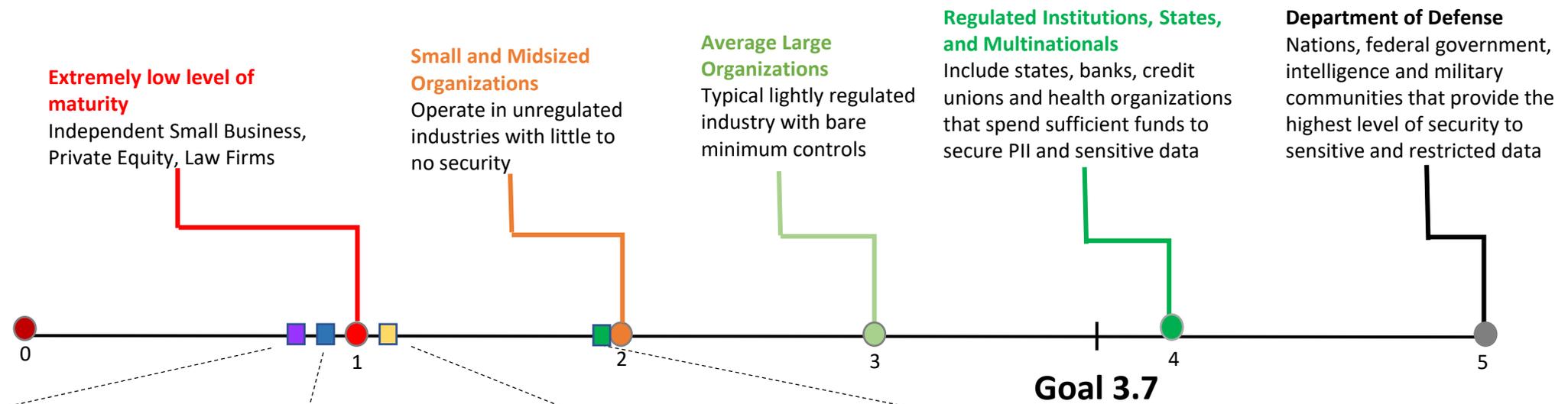
# K-12, City, and County Support

- The number of K-12 Districts, Cities, and Counties supported by NDIT has **Doubled** since the COVID 19 outbreak;
  - 120 Districts total with more implementing,
  - Expect 75% of all K-12 districts using NDIT resources by early-2021;
- Gradual increase in County and City Governments using NDIT resources;
  - NRG association of counties,
  - Other county contractors;
- Deliver about **\$400 Million** in people, processes, and technology.

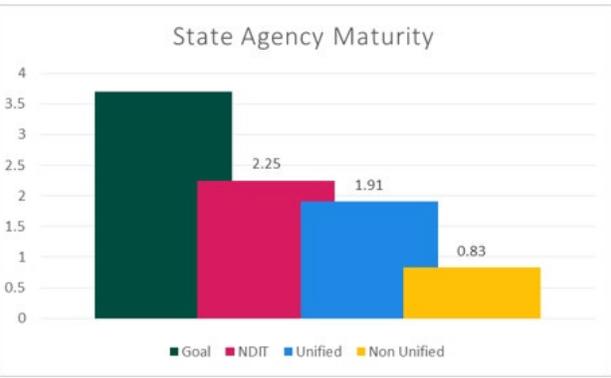
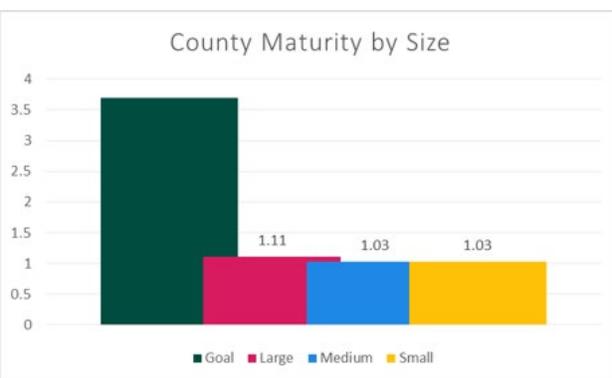
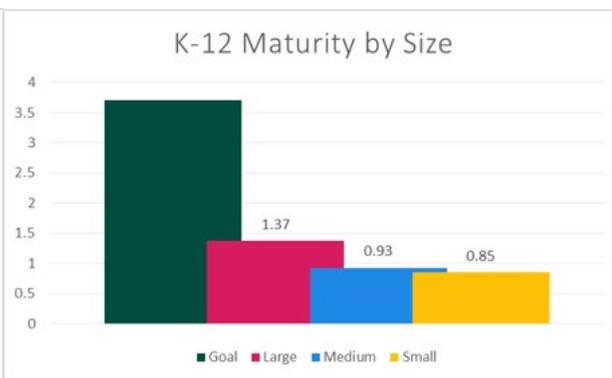
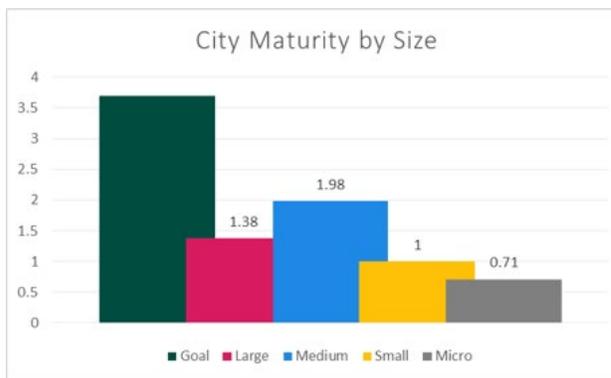


# Cybersecurity Capabilities in North Dakota

42% overall participation rate (target 25%)



■ **Cities - 0.76** (97 Reporting Cities)  
■ **K12 - 0.97** (104 Reporting K12)  
■ **Counties - 1.05** (29 Reporting Counties)  
■ **State - 1.91** (ND Gov.)



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# Overview of Shared Services



# IT Shared Service Staff/Funding

Agency	FTE	Salary	Operating	Agency	Staff	Salary	Operating
Governor's Office	-	-	\$ 15,840	Securities Department	-	-	\$ 8,400
Office of Management and Budget	4.0	\$ 846,183	\$ 143,615	Bank of ND	16.0	\$3,224,189	\$ 450,000
Dept of Health	5.0*	\$ 972,199	\$ 511,241	Workforce Safety and Insurance	12.0	\$ 2,605,625	\$ 3,322,309
Environmental Quality	1.0	\$ 224,266	\$ 296,190	Highway Patrol	2.0	\$ 427,955	\$ 1,138,518
Indian Affairs	-	-	-	Dept of Corrections	6.0	\$ 1,310,284	\$ 789,062
Job Service North Dakota	16.0	\$ 3,506,672	\$ 430,306	Dept of Commerce	1.0	\$ 202,481	\$ 126,579
Labor Dept	-	-	-	Game and Fish Dept	3.0	\$ 572,015	\$ 287,588
Dept of Financial Institutions	-	-	\$ 21,515	Dept of Transportation	0.0	-	10,500,000
				<b>NO NEW MONEY REQUIRED</b>			
*Need a correction of 1 FTE				<b>TOTALS</b>	<b>66.0*</b>	<b>\$13,891,869</b>	<b>\$18,041,163</b>

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# Shared Service Benefits

Labor costs are continuing to go up year over year, so cost reduction must be reflected in process and system enhancement

## Incident (tickets / help desk, etc)

Year	Volume	Cost / Incident	Total Cost
2017	36,748	\$25.22	\$926,725
2018	45,500	\$25.35	\$1,153,400
2019	52,231	\$25.20	\$1,315,975
2020	71,412	\$25.29	\$1,602,804
2021 Target*	76,616*	\$22.60*	\$1,618,522*
2022 Target*	82,926*	\$19.90*	\$1,610,429*



\*Estimated

## Hardware

Year	Laptop	Monitor	Support	Staff Ratio
2015	\$1,207	\$385	\$41	165:1
2016	\$1,170	\$342	\$41	165:1
2017	\$1,078	\$294	\$41	200:1
2020	\$1,000	\$249	\$39	250:1
2021 Target*	\$1,000	\$249	\$37	275:1
2022 Target*	\$975	\$240	\$35	300:1



Possible due to Unification and Service Management



# 2019-2021 Biennium Desktop Efficiency

<u>Labor Cost</u>	<u>Machine:FTE</u>
NDIT Labor \$39.00	Ratio 250:1
DHS Labor \$45.55	Ratio 160:1
DOT Labor \$39.50	Ratio 213:1
PNR Labor \$59.04	Ratio 135:1
COM Labor \$57.15	Ratio 70:1

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# K-12 Wide Area Network



ITD provides network bandwidth, Internet access, and video services to the schools

Gigabit to every school since July 2019

Approximately 65% or \$ 4,000,000 is paid by the Federal E-rate program each biennium

Work will begin in the 2021-2023 Biennium to renegotiate the end point connectivity costs for K-12 schools as our current contract terms will expire



# 2021-2023 Executive Budget – K-12 Network

Program - K-12 Network	FTE	General Funds	Special Funds	Federal Funds	Total
K-12 Network - 2019-21	4.0	\$ 5,077,970	\$ 90,000	\$ -	\$ 5,167,970
Budget Changes		(507,798)	-	-	(507,798)
Compensation Package		27,037	-	-	27,037
Total Executive Budget - K-12 Network	4.0	\$ 4,597,209	\$ 90,000	\$ -	\$ 4,687,209

\$507,798 budget change as a result of the 10% Executive budget reductions.



# Geographic Information Systems (GIS)



The North Dakota GIS Technical Committee and the Information Technology Department operate the GIS Hub, an infrastructure comprised of geospatial data storage, data services, and application interfaces.

The GIS Hub leverages the State's existing data, infrastructure, and geospatial expertise to share core geographic datasets to state agencies and the public. The GIS Technical Committee, consisting of 15 state agencies, enhances the GIS Hub by adding data and applications and increasing awareness of the Hub by promoting its use, value, and functionality.

There are more than 325 publicly available data layers on the GIS Hub with an average of over 1,000 data downloads per month and over 9.2 million web service hits per month.

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# 2021-2023 Executive Budget – GIS

Program - GIS	FTE	General Funds	Special Funds	Federal Funds	Total
GIS - 2019-21	1.0	\$ 977,629	\$ 1,150,000	\$ 75,000	\$ 2,202,629
One-Time Funding Reductions		-	(1,150,000)	-	(1,150,000)
Budget Changes		52,237	-	(9,321)	42,916
Compensation Package		9,101	-	-	9,101
<b>Total Executive Budget - GIS</b>	1.0	<b>\$ 1,038,967</b>	<b>\$ -</b>	<b>\$ 65,679</b>	<b>\$ 1,104,646</b>

Budget changes are a combination of the 10% Executive budget reduction and an increase of \$150,000 to support and maintain the land parcels application established in the 2019-21 biennium.



# Statewide Longitudinal Data System (SLDS)



The Statewide Longitudinal Data System leverages stakeholders and partners of education, training, and employment programs to create a system which provides data to support the research and evaluation of programs to improve the outcomes of individuals provided service. The program maximizes the usefulness of management information while protecting the privacy and security of personal information.

# 2021-2023 Executive Budget – SLDS

Program - SLDS	FTE	General Funds	Special Funds	Federal Funds	Total
SLDS - 2019-21	7.0	\$ 4,387,145	\$ -	\$ -	\$ 4,387,145
Budget Changes		(438,715)	-	500,000	61,285
Compensation Package		54,530	-	-	54,530
<b>Total Executive Budget - SLDS</b>	7.0	<b>\$ 4,002,960</b>	<b>\$ -</b>	<b>\$ 500,000</b>	<b>\$ 4,502,960</b>

\$438,715 budget change as a result of the 10% Executive budget reductions.

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# EduTech



EduTech provides information technology services, education technology professional development, student information/educational data services, and support to North Dakota PK-12 educators. Services are designed to give educators access, training and support to use technologies in their classrooms to improve teaching and learning. EduTech uses a distributed model, with staff located across North Dakota, to provide support to schools. EduTech services are available universally within the ND PK-12 community.

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# EduTech



## Services:

- PowerSchool Services to provide training, implementation, support to ND schools – deployed in all public schools
- Professional Development for K-12 educators to use software/hardware and to integrate technology into classroom instruction
- Distributed IT Specialists to deliver customized professional development and instructional coaching to ND educators
- Statewide K-12 Active Directory and Office365 and Microsoft TEAMS for Schools
- IT Services to provide e-mail, web hosting, internet filtering, desktop security software, interactive video services
- E-rate Support Services to provide training and compliance information
- Helpdesk Services to support customers in the use of EduTech’s services such as PowerSchool, Office 365 and internet filtering
- Videoconference Enrichment Events to offer students and teachers the opportunity to participate in national/international collaborations, content programs and professional development
- EduTech was the first organization in the nation to be named an official training partner of CYBER.ORG (previously NICERC)
- EduTech staff member serving on the National Standards Writing Committee as a content specialist to develop national K-12 educational cybersecurity standards.

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# 2021-2023 Executive Budget – EduTech

Program - EduTech	FTE	General Funds	Special Funds	Federal Funds	Total
EduTech - 2019-21	30.0	\$ 3,311,619	\$ 6,334,154	\$ -	\$ 9,645,773
Budget Changes		(331,162)	(258,412)	500,000	(89,574)
Compensation Package		88,733	87,116	-	175,849
Total Executive Budget - EduTech	30.0	\$ 3,069,190	\$ 6,162,858	\$ 500,000	\$ 9,732,048

The Powerschool Student Information System is funded by general funds in DPI's budget. The 10 % Executive budget reduction had a direct effect on that program as well.

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# Health Information Technology



The North Dakota Health Information Technology is charged with making recommendations for implementing a statewide interoperable health information infrastructure that is consistent with emerging national standards and promotes interoperability of health information systems for the purpose of improving health care quality, patient safety, and overall efficiency of health care and public health services.

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# Health Information Technology



- 175+ Signed Participation Agreements
- Represents all integrated networks in ND
- 400+ Healthcare locations
- 16 different EHRs
- Over 1.2 million patient records
- All acute care hospitals, Federally Qualified Healthcare Clinics, and rural health clinics in ND
- 75% of local public health units are contributing data (others are onboarding)

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# Health Information Technology



- EHR Interoperability via Single Sign On
- Clinical Portal
  - Allergies/Medications/Encounters
  - Prescription Drug Monitoring Program (PDMP)
  - Immunizations
  - Laboratory Results
  - Radiology Reports and other Transcribed Documents
  - Images
  - Access to the eHealth Exchange
- Connections for Public Health Reporting
  - Syndromic Surveillance
  - Electronic Lab Reporting
  - Immunizations
  - Autism Registry
- Healthcare Provider Directory
- Statewide Healthcare Directive Registry

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# 2021-2023 Executive Budget – Health IT

Program - Health IT	FTE	General Funds	Special Funds	Federal Funds	Total
Health IT - 2019-21	4.0	\$ -	\$ 47,934,279	\$ 500,000	\$ 48,434,279
One-Time Funding Reductions		-	(43,555,133)	-	(43,555,133)
Budget Changes		100,000	(1,675,000)	5,831,472	4,256,472
Compensation Package		-	30,748	-	30,748
<b>Total Executive Budget - Health IT</b>	4.0	\$ 100,000	\$ 2,734,894	\$ 6,331,472	\$ 9,166,366

The Budget Changes include removing the one-time funding (\$43.5M) for the NDHIN Medicaid Expansion Project. The majority of the project is funded with federal funding in the Department of Human Services. This federal grant will expire September 30<sup>th</sup> 2021.



# Public Safety

The Statewide Interoperable Radio Network initiative is special fund appropriation to conduct a comprehensive update of systems based on an integrated, interoperable trunked Association of Public-Safety Communications Officials (APCO) Project 25 standard (P25) system. The 2019-2021 appropriation included \$20.0M of SIF funding, \$80.0M in line of credit authority from Bank of North Dakota and \$20.0M of Bank of North Dakota profits.

The Enhanced 911 initiative includes a new maintenance contract with Motorola for the replacement and ongoing support of the Public Safety Answering Points (PSAP) that was installed in the 2013-15 biennium

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# SIRN Status/Progress

## Status:

- Core infrastructure – complete
- PSAP infrastructure
  - 5 PSAPs – complete
  - 6 PSAPs - on scheduled Q1 2021
  - Remaining PSAPS – planning phase
- Tower Infrastructure
  - State Towers – on schedule
  - Early Adopter locations – on schedule
  - Remaining towers – planning phase

**Project Status – Green**

## Expecting first users on new system in 2021

- Williston
- Grand Forks
- Bismarck
- Minot

## Issues:

- Covid Related:
  - Travel Restrictions
  - Supply Chain
  - Vendor workforce infections/national demand
  - 3-4 months delay in overall project

## Mitigations:

- Extremely flexible vendors and stakeholders minimized actual schedule impacts (1-2 months)
- Weather has been friendly (if spring is equally friendly, its possible mitigate more schedule)

## On-going Schedule Risks:

- Covid
  - Travel
  - Supply Chain
  - Workforce
- Weather



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# 2021-2023 Executive Budget – Public Safety

Program - Public Safety	FTE	General Funds	Special Funds	Federal Funds	Total
Public Safety - 2019-21	0.25	\$ -	\$ 132,330,000	\$ -	\$ 132,330,000
One-Time Funding Reductions		-	(120,000,000)	-	(120,000,000)
Budget Changes		1,858,240	-	-	1,858,240
Compensation Package		-	8,074	-	8,074
<b>Total Executive Budget - Public Safety</b>	0.25	<b>\$ 1,858,240</b>	<b>\$ 12,338,074</b>	<b>\$ -</b>	<b>\$ 14,196,314</b>

The Budget Changes include removing the one-time funding (\$120M) for the Statewide Interoperability Radio Network (SIRN) Project which is a multiple biennium project that continue into next biennium with IT Project Carryover funding.

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# Recent Audit Findings

- Most recent financial audit report – [FY 2017 and 2018](#)
  - A formal recommendation was issued pertaining to annual physical inventory
    - Procedures were implemented for the following:
      - sensitive assets at risk of loss are identified,
      - data on assets is properly encrypted, and
      - follow-up is completed on sensitive assets not located.



# 2021-2023 Executive Budget

Program	FTE	General Funds	Special Funds	Federal Funds	Total
NDIT Operations	450.0	\$ 3,158,273	\$ 228,685,959	\$ -	\$ 231,844,232
Public Safety - (E911/SIRN)	1.0	1,858,240	12,338,074	-	14,196,314
K-12 Network	4.0	4,597,209	90,000	-	4,687,209
Geographic Information System	1.0	1,038,967	-	65,679	1,104,646
Statewide Longitudinal Data System	7.0	4,002,960	-	500,000	4,502,960
EduTech	30.0	3,069,190	6,162,858	500,000	9,732,048
Health Information Technology	4.0	100,000	2,734,894	6,331,472	9,166,366
<b>Total</b>	<b>497.0</b>	<b>\$ 17,824,839</b>	<b>\$ 250,011,785</b>	<b>\$ 7,397,151</b>	<b>\$ 275,233,775</b>

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# 5 KEY THINGS RECAP

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# Key Messages

- IT Unification creates significant savings and advantages for the state
- Cyber security is a critical problem for the entire state and must continue to be addressed
- Ancient technology limits the state's ability to lower operational costs, attract and retain new North Dakota talent and innovate
- North Dakota IT put forth all efforts to aid agencies to fight COVID19
- The IT budget is relatively flat after normalizing

N O R T H  
Dakota

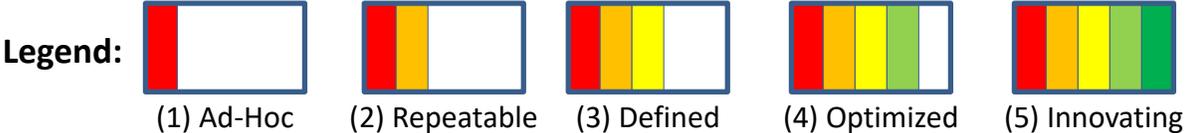
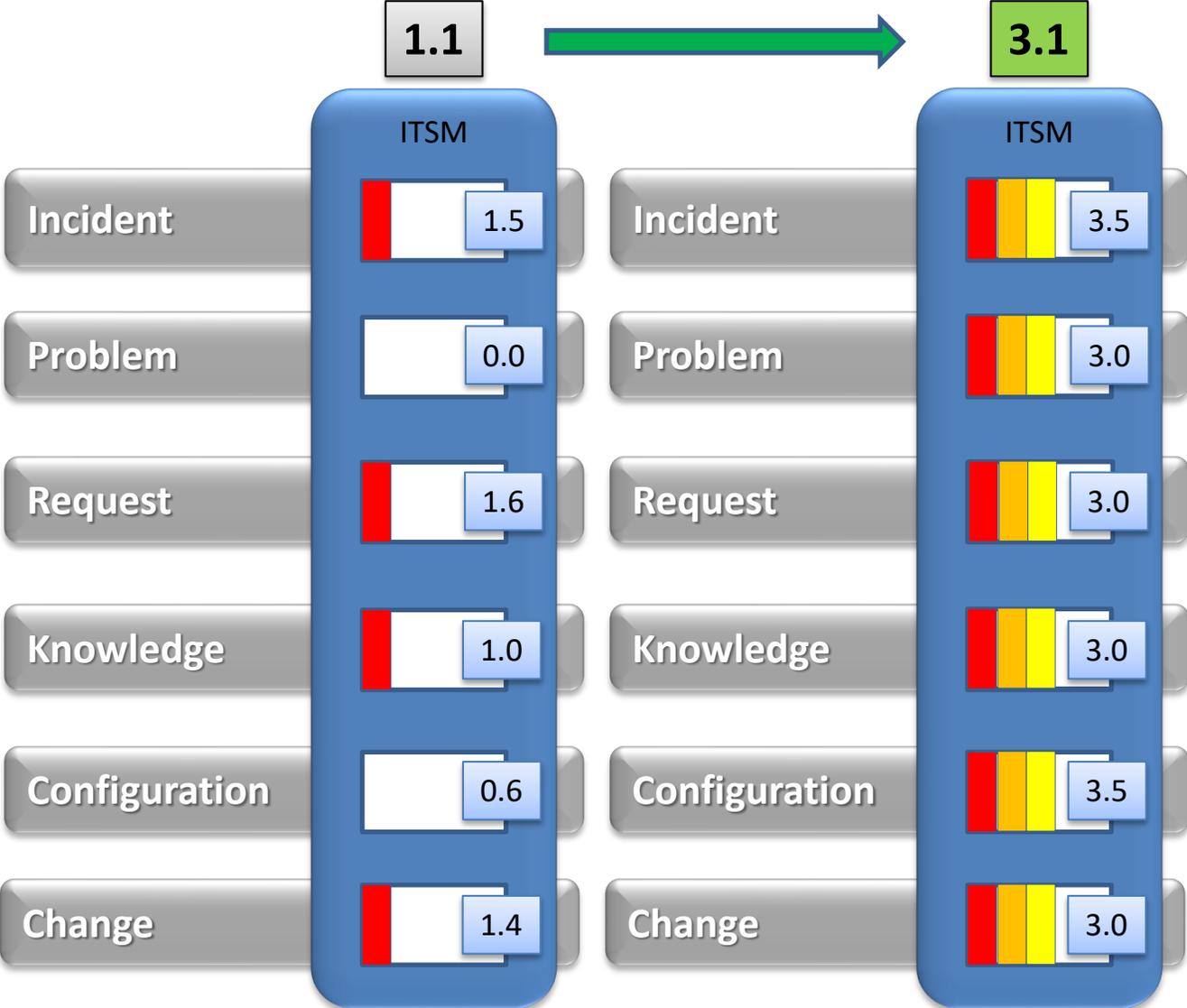
Be Legendary.™

Appendix

# APPENDIX: IT Unification

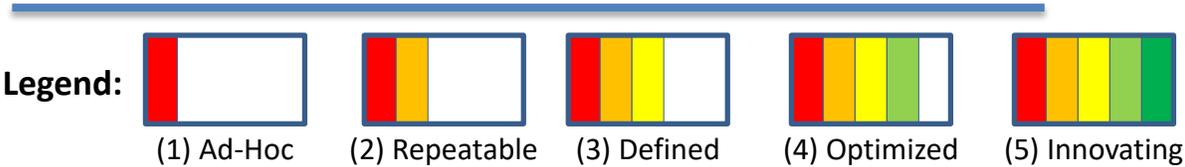
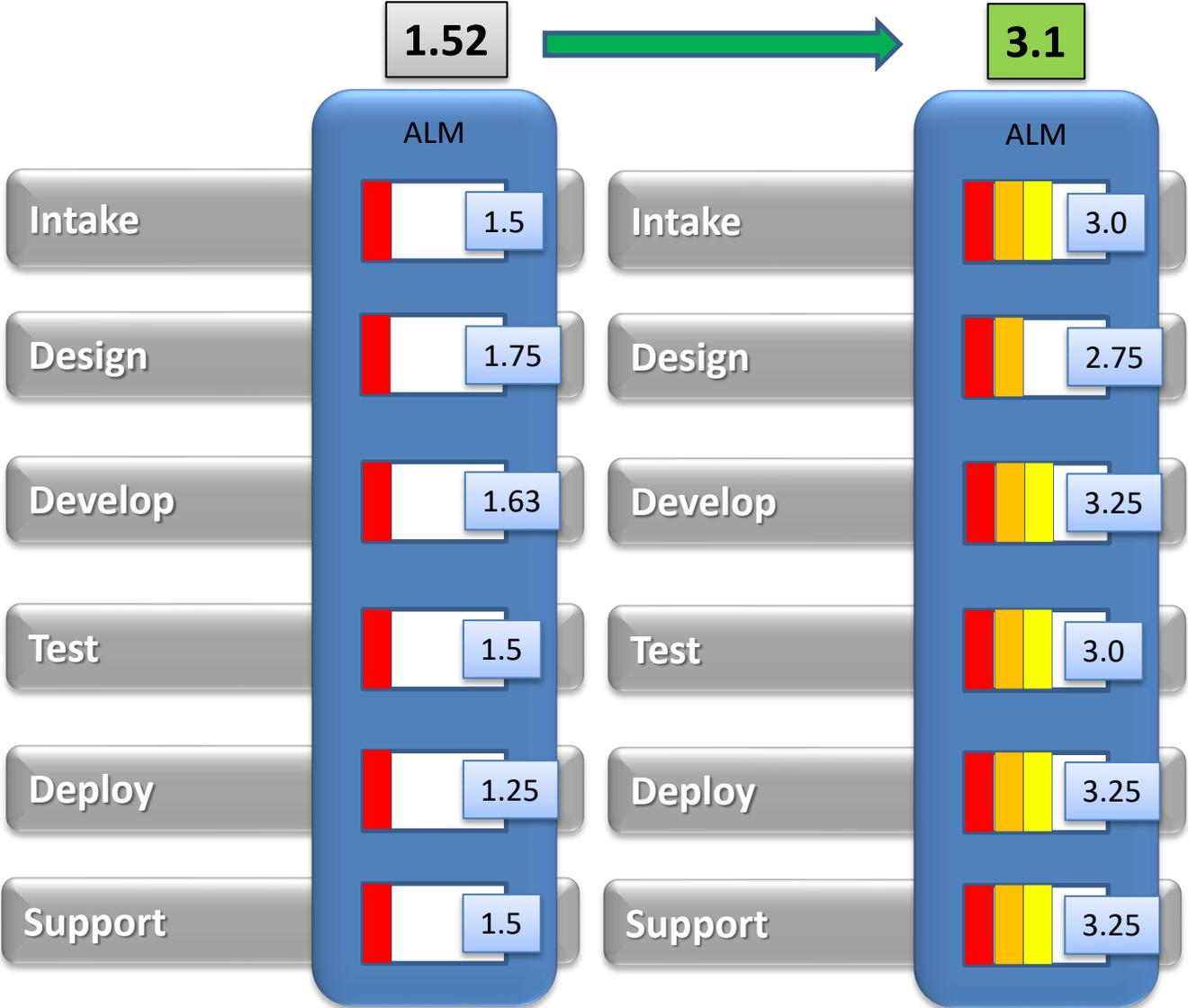
# Service Management Goals

- Comprehensive redesign of service processes
- Complete rethinking of self-service and automated services
- Integration to other service delivery centers (development, security, etc.)



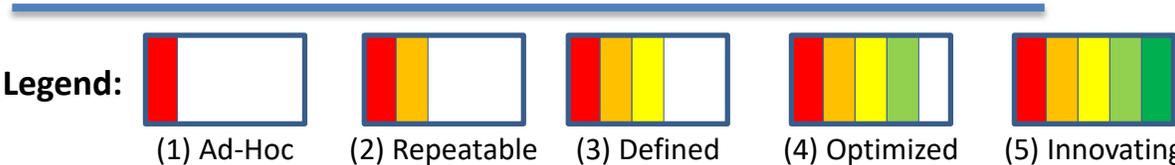
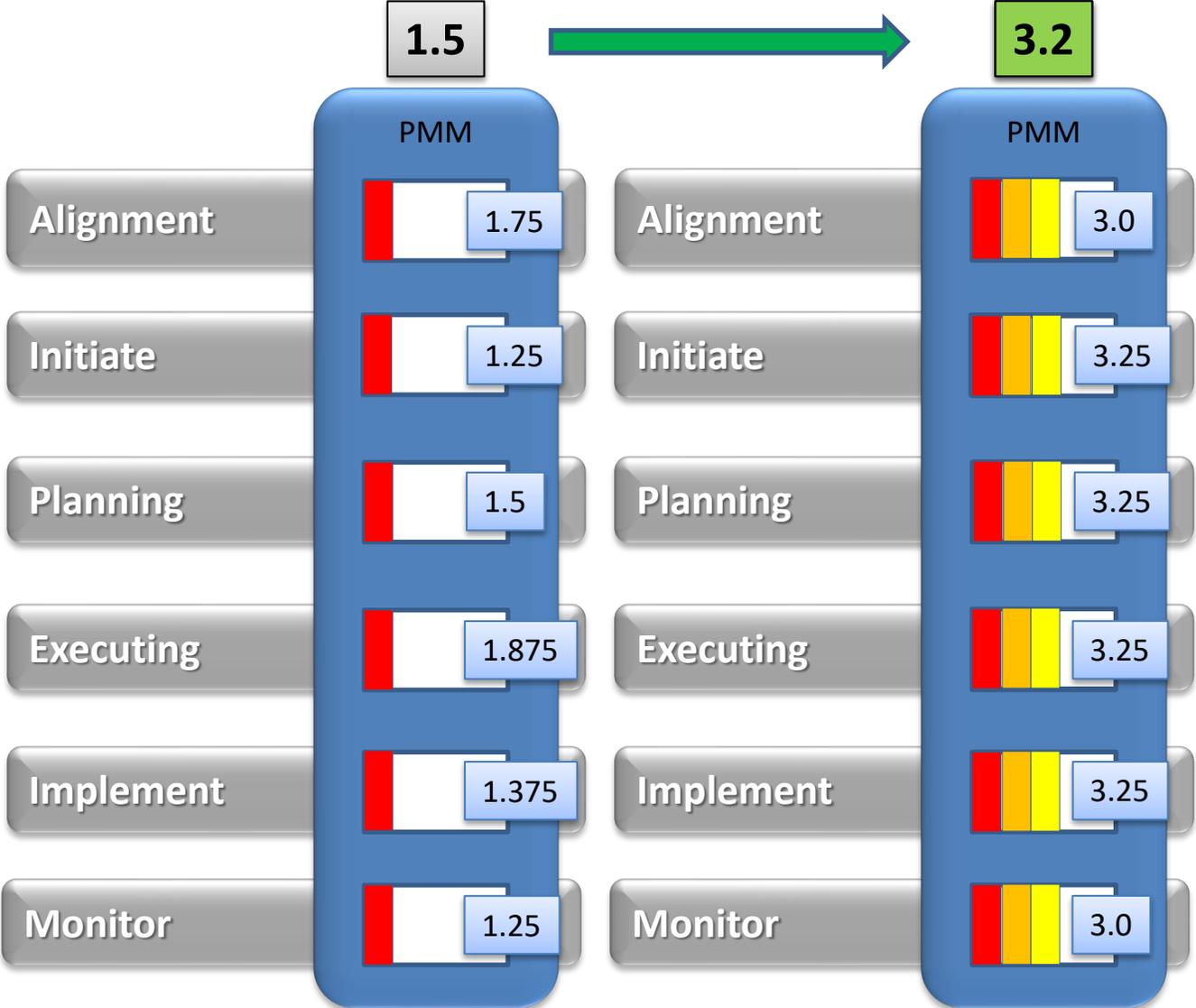
# Software Development Goals

- Move to low/no-code development platforms
- Significant decrease in development time (time to live)
- Mobile always available in any new development



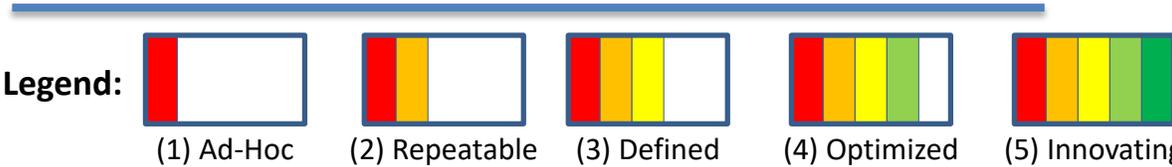
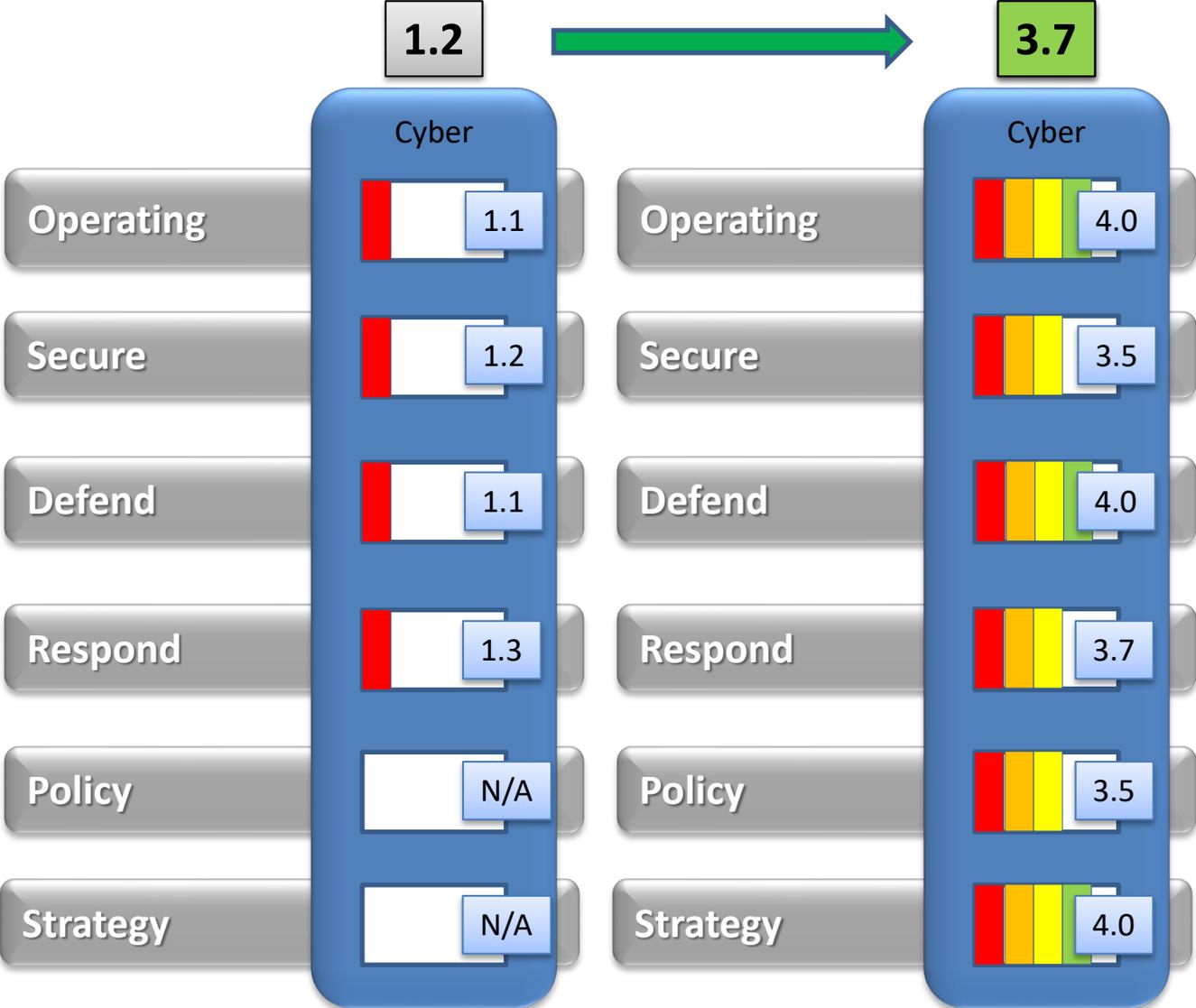
# Project Management Goals

- Create comprehensive portfolio views of IT projects across state government
- Implement Resource Management across all IT resources



# Cyber Security Goals

- Every Student, Cyber Educated, Kindergarten through PHD
- Whole of Government Defense across all 7 branches of Government (SB2110)
- Adopt an active defense mindset – defend from the front of the pack



# List of IT Project Proposals

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- **Department of Human Services**

1. FRAME and CCWIPS Transformation
2. Medicaid Management Information System (MMIS) Transformation

- **Office of Management and Budget**

1. Budget System
2. eProcurement Software

- **Judicial Branch**

1. Juvenile Case Management System Replacement
2. Supreme Court Docket System Replacement

- **Department of Trust Lands**

1. Land Management System

- **Workforce Safety and Insurance**

1. Releases 9-13 of the Claims and Policy System Program (submitted as 5 separate projects)
2. Releases 5-8 of the myWSI Secure Portal enhancements (submitted as 4 separate projects)

- **Department of Transportation**

1. Traffic Counting Program Modernization
2. Website Drupal Uplift and Enhancements
3. Construction and Materials Management System
4. Traffic Data Editing and Analysis System Replacement
5. Automated Vehicle Location hardware and Software Expansion

- **Job Service North Dakota**

1. Unemployment Insurance System Modernization

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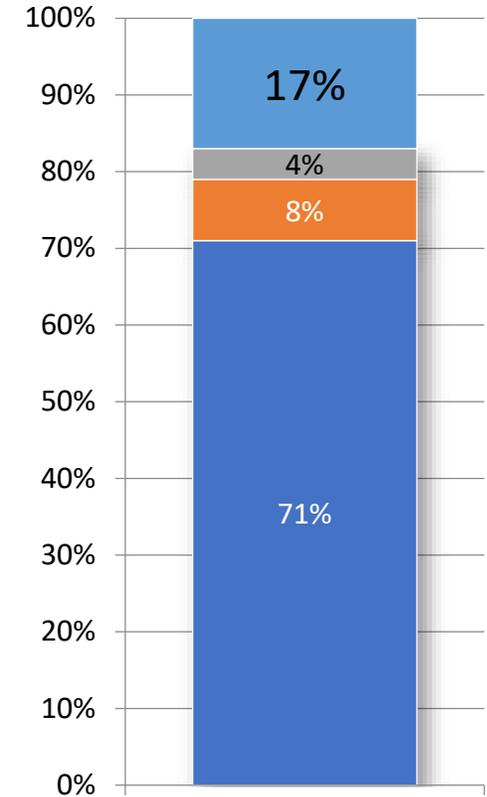
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## Overview

- 15 projects requested under the “Large Project Oversight” process
  - Includes project requests of \$500,000 and above
  - NOTE: We have limited visibility of below \$500,000 projects today (pre-Unification / Demand Mgmt., etc.)

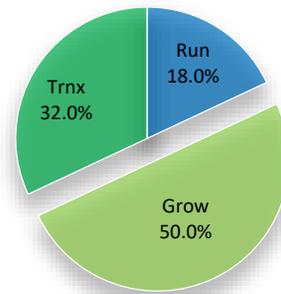
Agency	# of Run Proj	# of Grow Proj	# of Trnx Proj	Total # of Proj	Total Costs for Agency
Human Services			2	2	\$65,000,000
Management & Budget		2		2	\$3,251,304
Judicial Branch	2			2	\$4,000,000
Trust Lands	1			1	\$1,600,000
Workforce Safety & Insurance		4	5	9	\$10,550,000
Transportation		5		5	\$17,431,000
Job Service ND	1			1	\$3,000,000
<b>TOTAL</b>	<b>4</b>	<b>11</b>	<b>7</b>	<b>22</b>	<b>\$104,832,304</b>



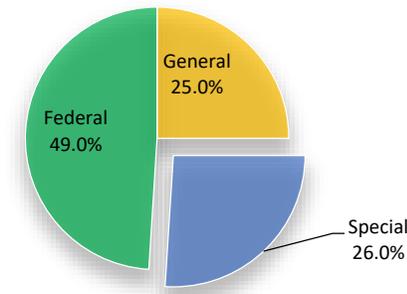
### Simple R/G/T Explanation

- Run* = modernization to continue normal business
- Grow* = expansion of existing services or adding new “typical” service
- Trnx* = performing or expanding services in a new way that fundamentally changes business outcomes

Run/Grow/Trnx



Funding Splits



Distribution on Pillars

- Main Street
- Transf. Education
- Tribal Eng.
- Health / Addiction
- Reinvention

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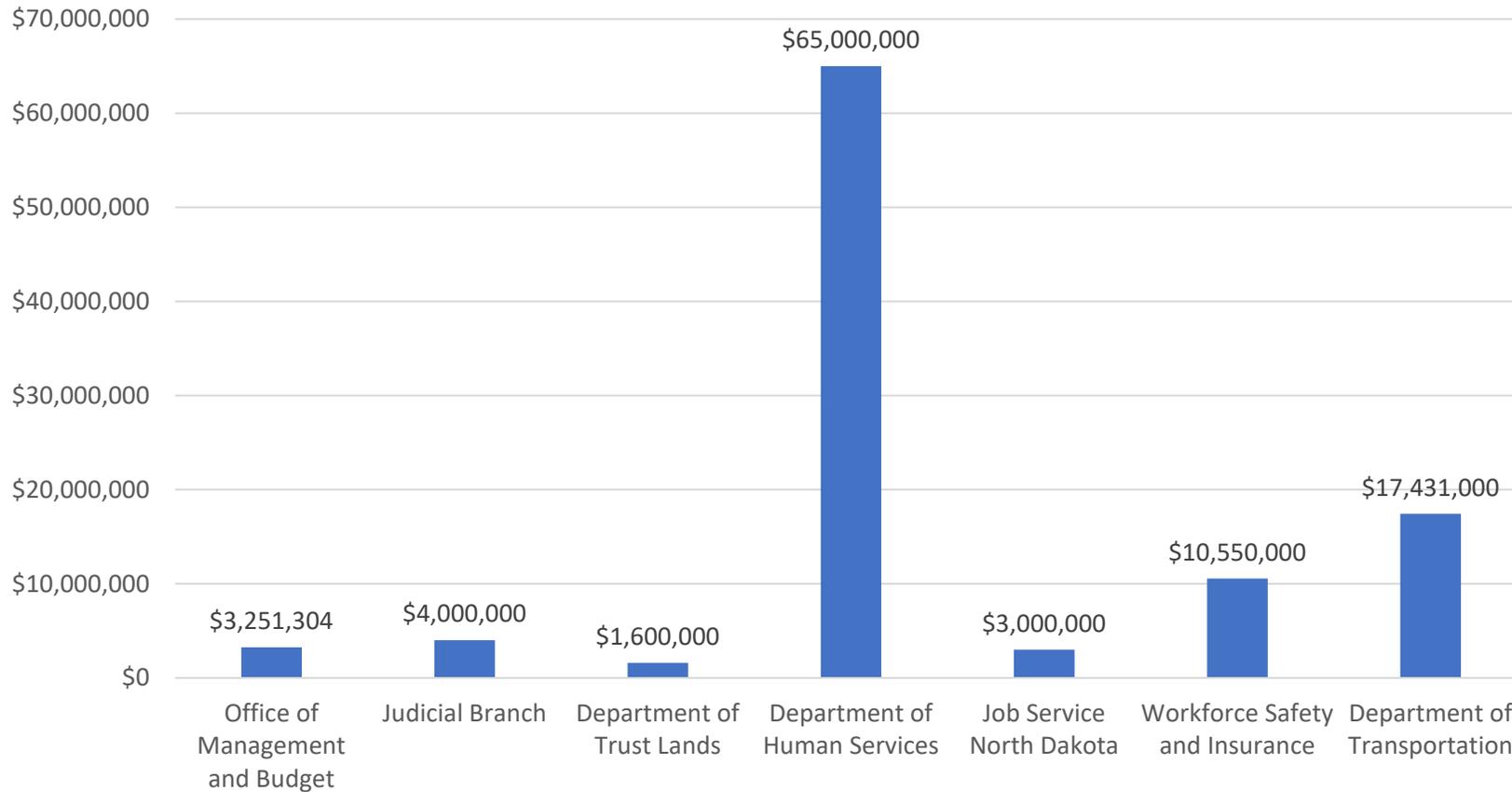
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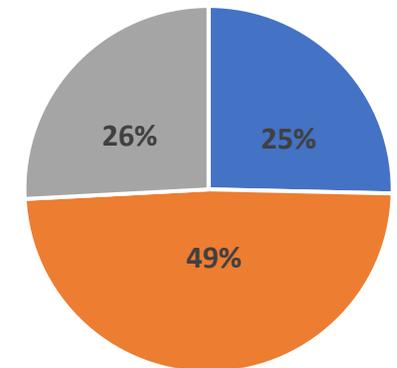
# Major IT Project Proposals – All Depts

### Large IT Project Requests for the 2021-2023 Biennium



Planned  
Biennium Cost  
**\$104,832,304**

Number of Projects  
**15**



■ General Fund Request  
■ Federal Fund Request  
■ Special Fund Request

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# APPENDIX: COVID19 Response

# Technology Operations during COVID19

Ramp up Over past 30 days

	K12 Count	K12 % increase	State Count	State % increase
Users "fitted" to work from home	--	--	7,100	+700%
Average daily VPN connections	--	--	3,700	+630%
Teams channel messages	15,380	+15,100%	10,184	+300%
Chat messages	62,454	+2,400%	201,104	+280%
Softphone Calls	2,542	+22,100%	6,500	--
Meetings	1,472	+10,200%	3,758	+210%
Teams Broadcast Attendees	--	--	13,180	--
Other Remote Tech Activity	8,368	+700%		

## Telework Transition

- ~70% team working COVID
- Distance ed for ~120k students in 4 days
- New telework support software to ~7k in 20 hours
- ~30% team working 80+ hour weeks

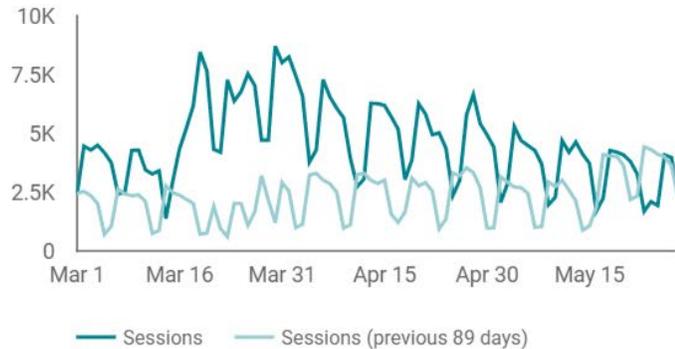
## ND Gov - Portal

### Traffic

Users	Pageviews
<b>213,934</b> ↑ 75.4%	<b>786,254</b> ↑ 58.0%
Sessions	Avg. Page Load Time (sec)
<b>406,700</b> ↑ 96.7%	<b>3.1</b>

#### How site sessions are trending?

Goal: Understand usage trends



## Health

### Traffic

Users	Pageviews
<b>1,529,905</b> ↑ 2,674.2%	<b>14,005,662</b> ↑ 5,443.5%
Sessions	Avg. Page Load Time (sec)
<b>6,676,616</b> ↑ 7,125.1%	<b>3.56</b>

#### How site sessions are trending?

Goal: Understand usage trends



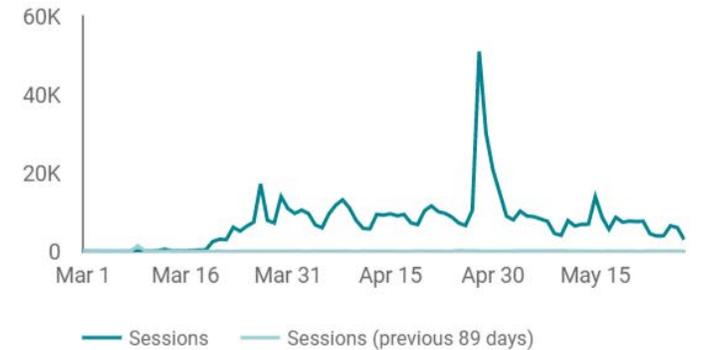
## ND Response

### Traffic

Users	Pageviews
<b>342,353</b> ↑ 5,076.2%	<b>1,320,726</b> ↑ 10,137.4%
Sessions	Avg. Page Load Time (sec)
<b>650,497</b> ↑ 7,310.5%	<b>2.56</b>

#### How site sessions are trending?

Goal: Understand usage trends



# NDIT Response to COVID-19



Enabled telework for more than 7,000 state team members within 48 hours



Threat trends and misinformation alerts are being posted at [NDResponse.gov](https://ndresponse.gov) on a daily basis



Virtual Private Network expanded for additional 10,000 remote workers to enable secure connection to the state network



<https://portal.office.com> is available for remote work to allow access to O365 tools



24/7 Help Desk support augmented with 400% more resources



Mandatory multi-factor authentication ensures more secure remote connectivity



# Telework Transition

- Offered and/or assisted all state government, higher education, k-12, and numerous political subdivisions to ensure telework-ready in first two weeks.
- Created suite of “how to” guides, videos, and checklists to support transition.
- Added ~40 call center staff to support 24/7 coverage.
- Expanded VPN capability for improved connectivity.
- Issued regular messages around working securely

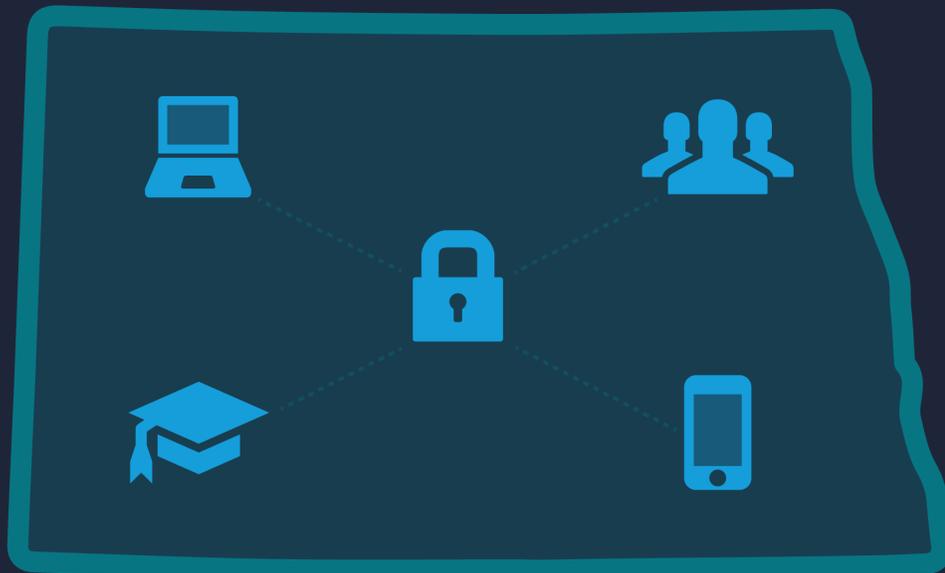


- Augmented Call Center with 40 staff
- Re-designed website – responsive design, improved content, FAQs layout and chat bot.
- Amplified national unemployment fraud consumer message
- Doubled the capacity of the IVR system and the server infrastructure

# APPENDIX: Cyber Security

# STAY SAFE ONLINE

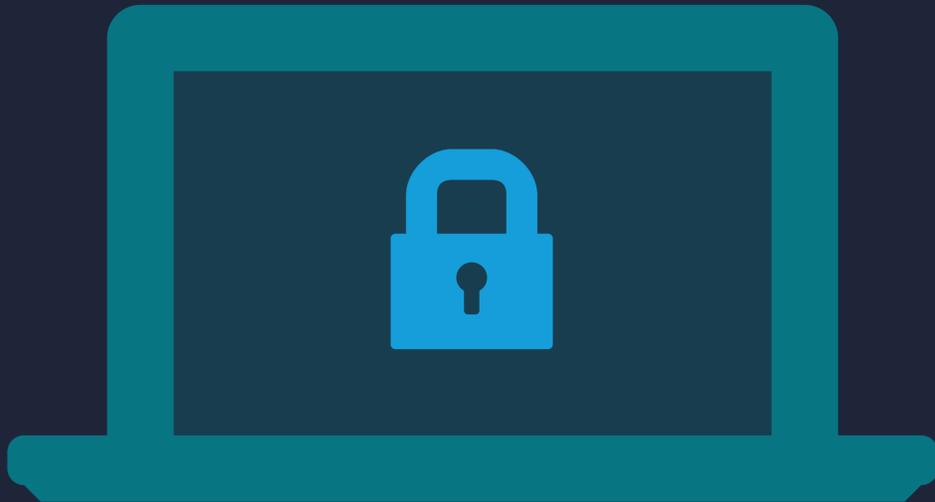
Physical safety and online safety are more important now more than ever. While the coronavirus is top-of-mind, hackers will try to exploit it for illicit gain.



- **Be cautious with links/attachments**  
If you aren't expecting the email or don't recognize the sender - don't open it
- **Use trusted websites like the CDC.gov**  
Bookmark trusted sites and avoid web surfing and clicking on random website links
- **Don't reveal personal information or financial info if asked over email**

# Stay Safe During Virtual Meetings

Hackers may be targeting your virtual meetings! Video conferencing has become key to staying connected with family, friends and colleagues during COVID-19. Follow these tips – avoid security risks and stay safe online.



## Virtual Meeting Security Tips:

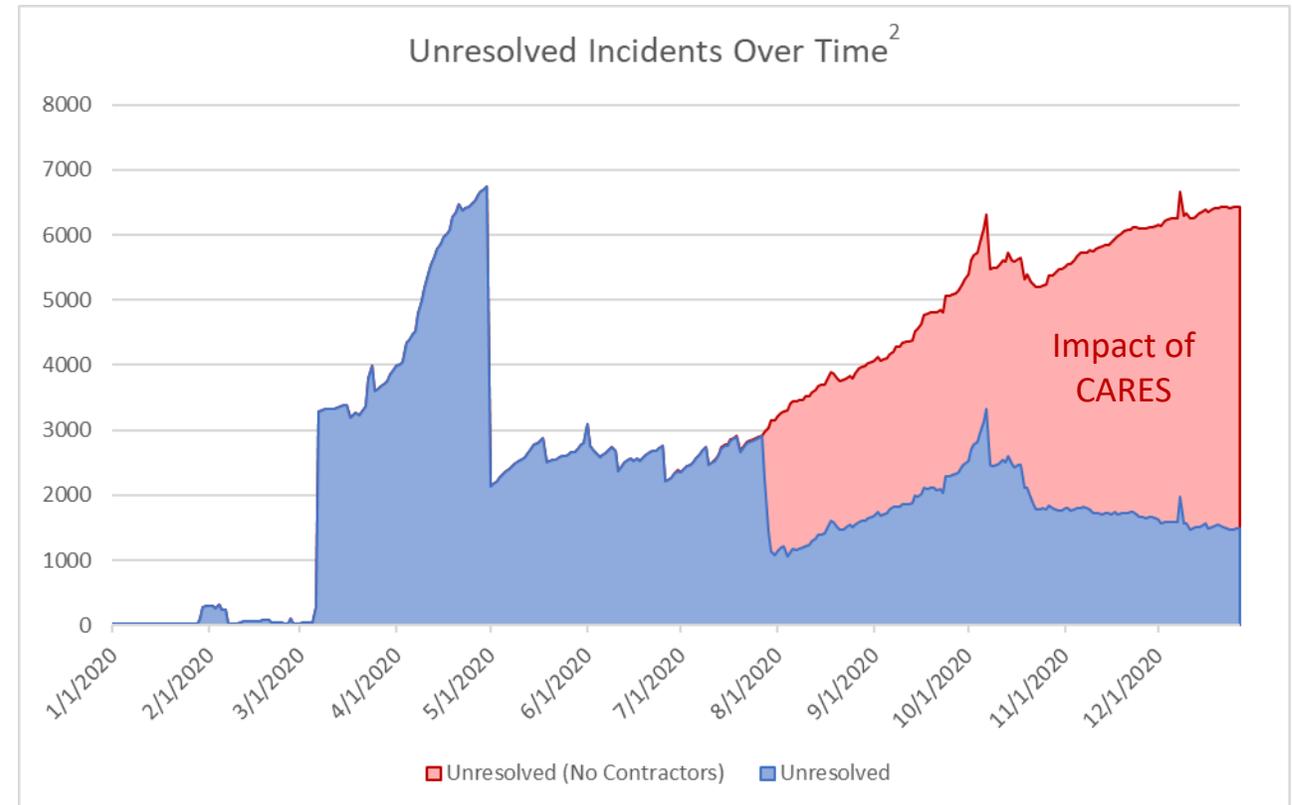
1. Require a password to access your meeting
2. Control access to your meeting through a waiting room
3. Do not publish meeting invitations in public, online locations

For more covid-19 resources, including cybersecurity information, visit [NDresponse.gov](https://ndresponse.gov) #InThisTogetherND #StaySafeOnline #CyberSmart

# Impact of CARES Funding on Incidents

**4,947** security incidents<sup>1</sup> have been closed by Cares Funded workers since July 2020.

Without the additional resources, it is estimated our analysts would have worked an additional **3,216** hours<sup>3</sup>. The assistance has allowed our team to improve automation and efficiency.

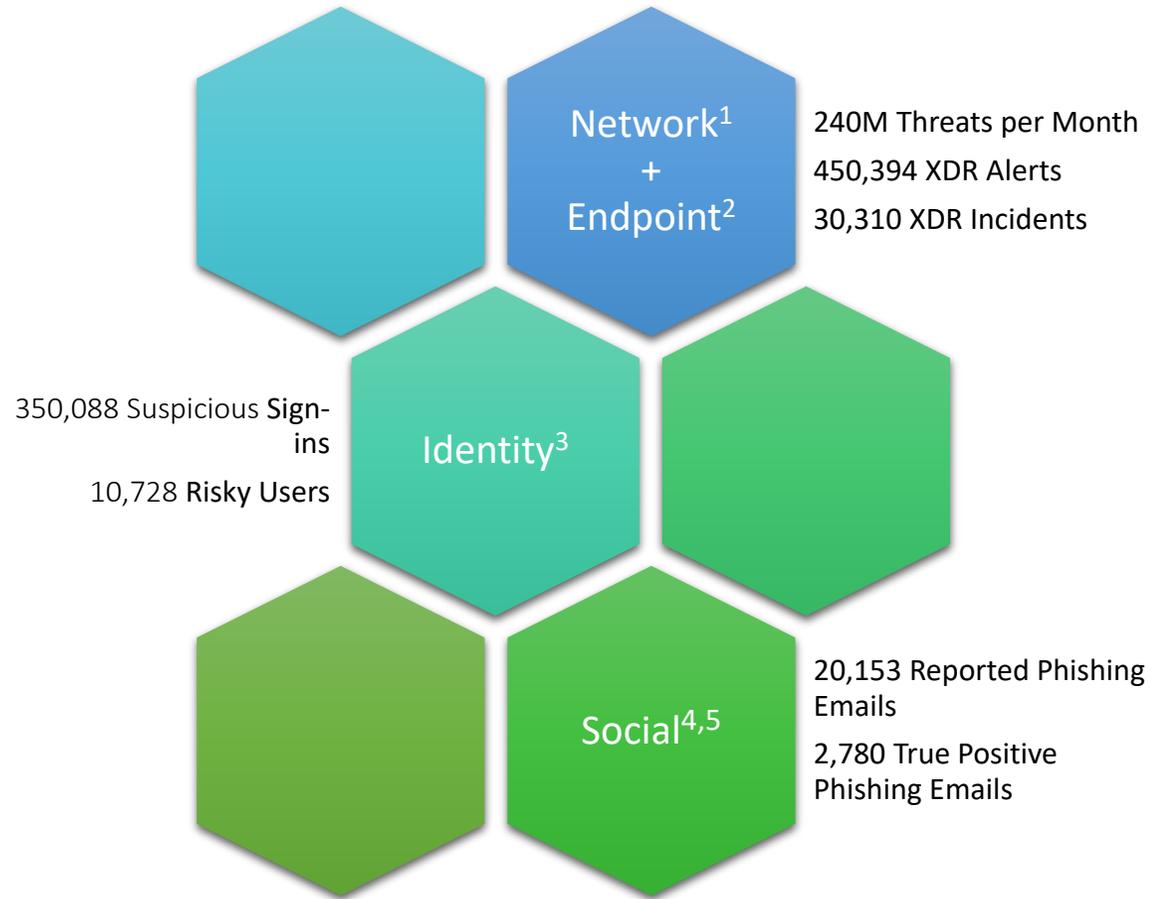


1. Incidents based on data from Cortex XSOAR 01/01/2020 – 12/27/2020

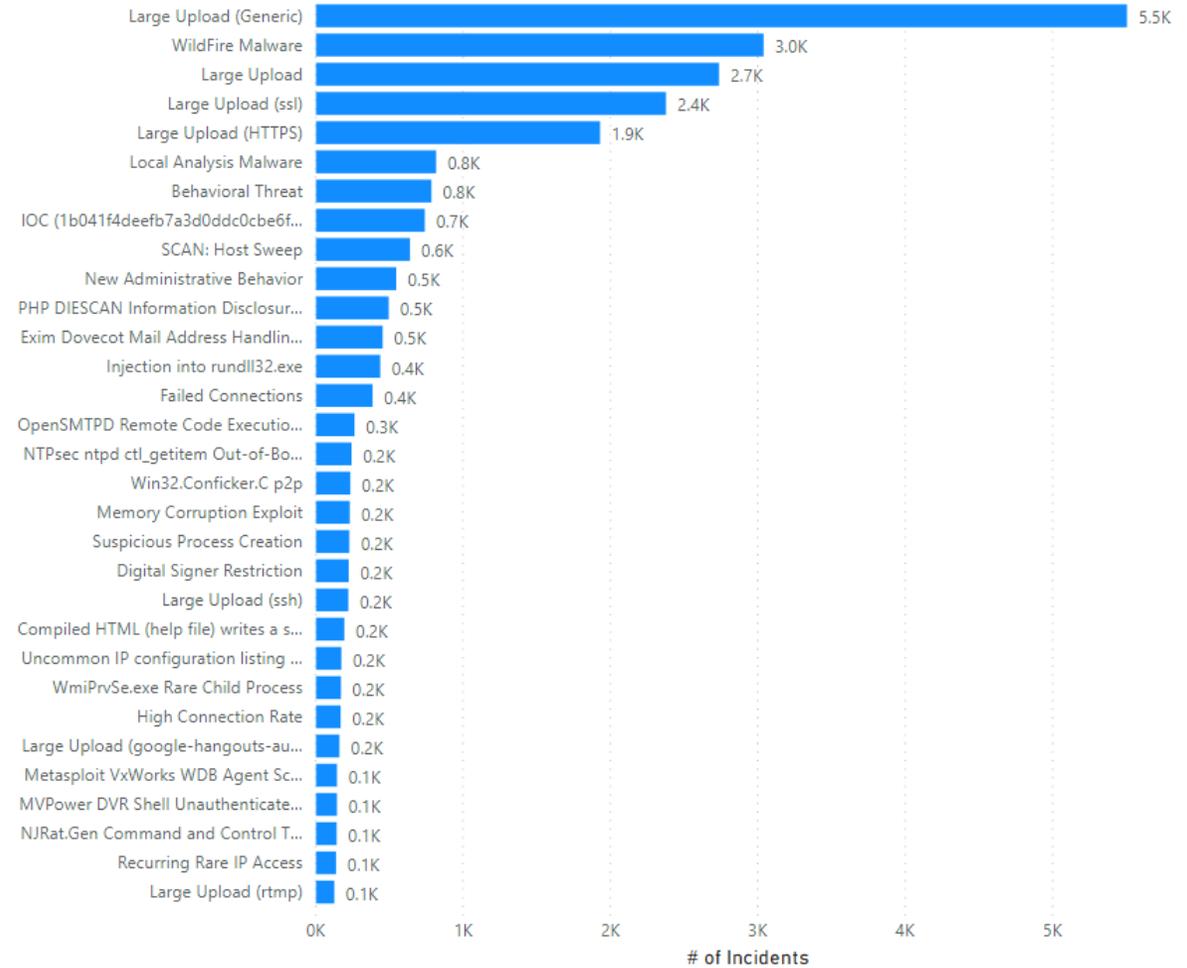
2. Incidents were only being ingested into Cortex XSOAR on a limited basis prior to March 2020.

3. Hours based on total hours billed by contractors embedded with the Cyber Analysis and Response team.

# 2020 Threats by the numbers



Top XDR Incidents



1. Threats per month based on ND.GOV Panorama Threat Activity

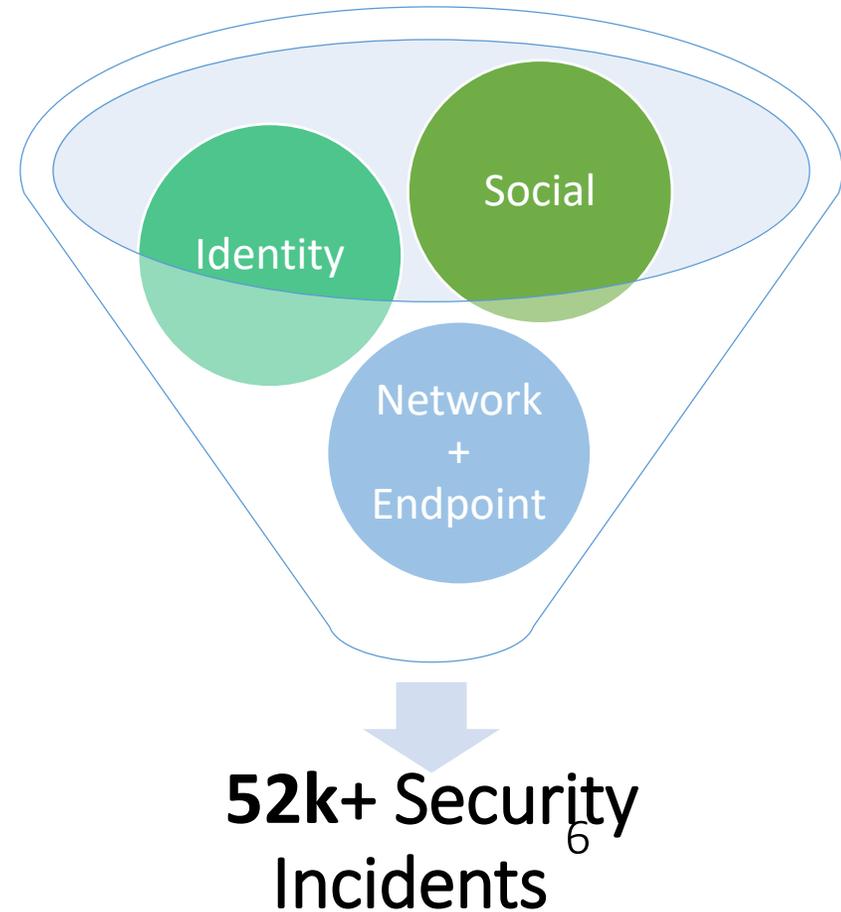
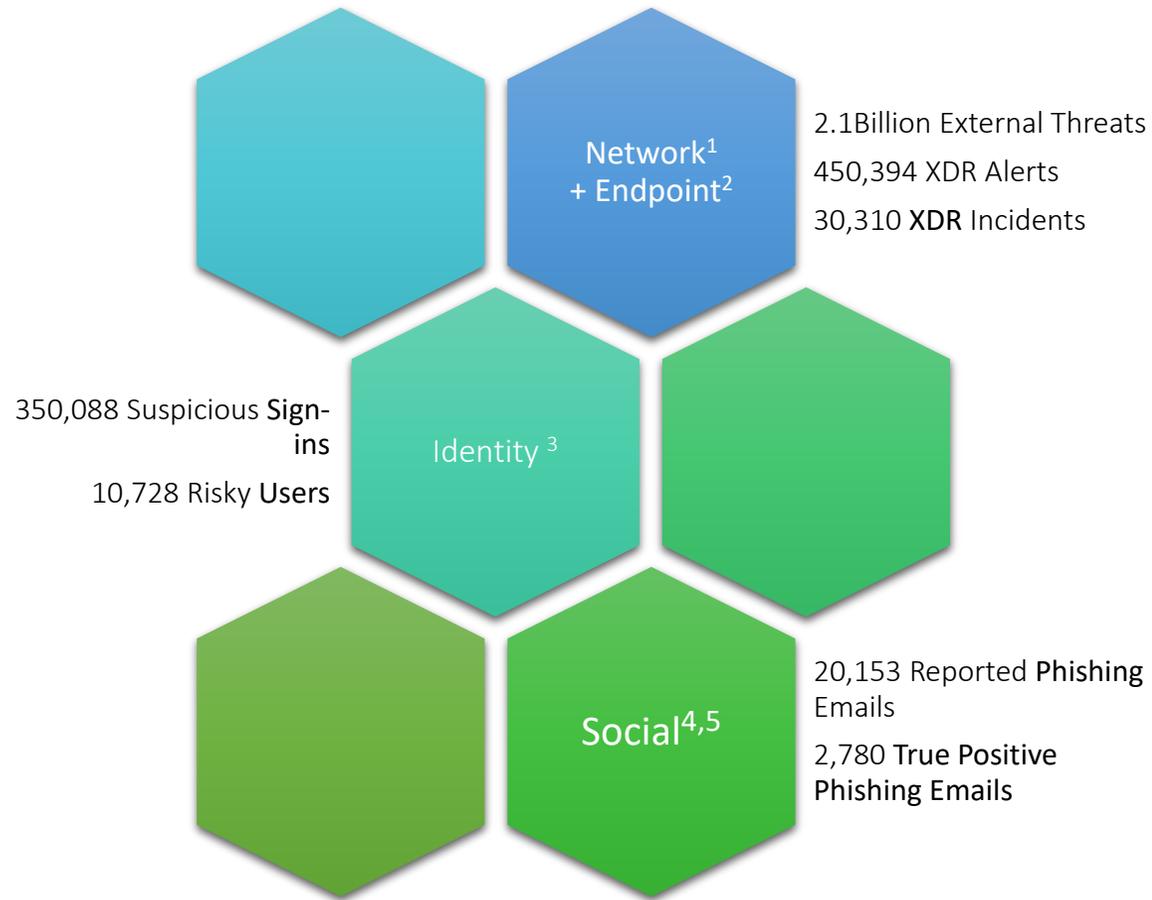
2. XDR alerts and incidents based on Cortex XDR data between 01/01/2020 – 12/28/2020. Excludes alerts from “Restriction” category.

3. Risky sign-ins and risky users based on Microsoft Azure Identity Protection data for the last 90 days as of 12/28/2020.

4. Reported Phishing Emails based on KnowBe4 Phish Alert Button (PAB) Dashboard for NDIT.

5. True Positives based on Cortex XSOAR Incidents between 01/01/2020 – 12/28/2020 of type “Phishing” or “NDIT – Phishing” where close reason is not “False Positive”

# 2020 Threats by the numbers



1. Threats per month based on ND.GOV Panorama Threat Activity

2. XDR alerts and incidents based on Cortex XDR data between 01/01/2020 – 12/28/2020. Excludes alerts from “Restriction” category.

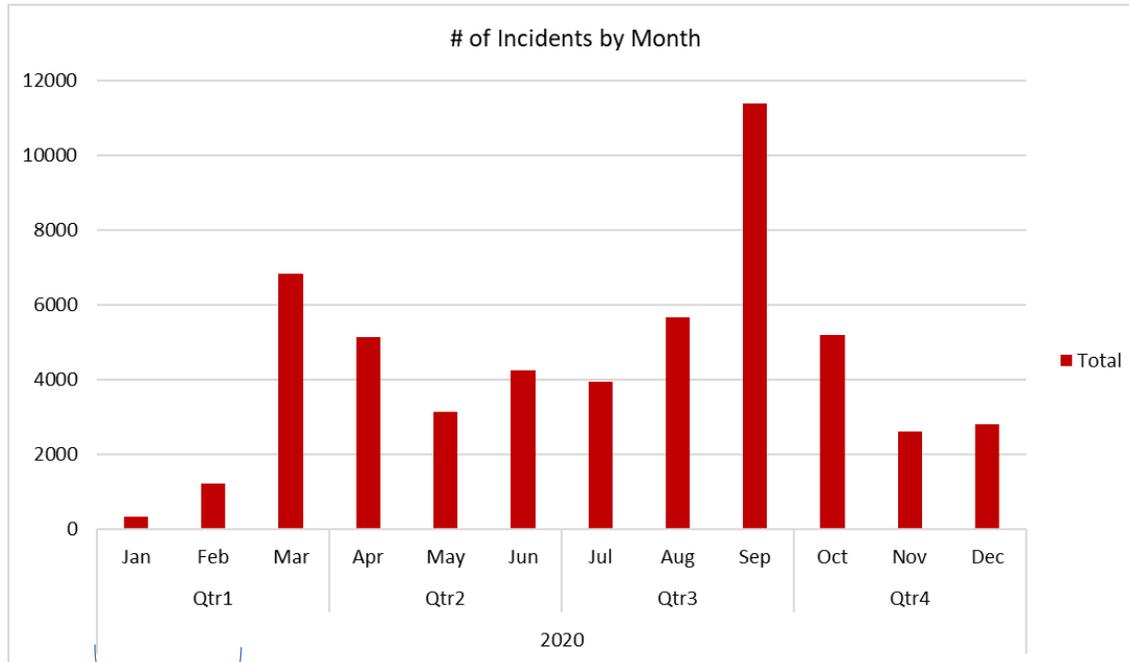
3. Risky sign-ins and risky users based on Microsoft Azure Identity Protection data for the last 90 days as of 12/28/2020.

4. Reported Phishing Emails based on KnowBe4 Phish Alert Button (PAB) Dashboard for NDIT.

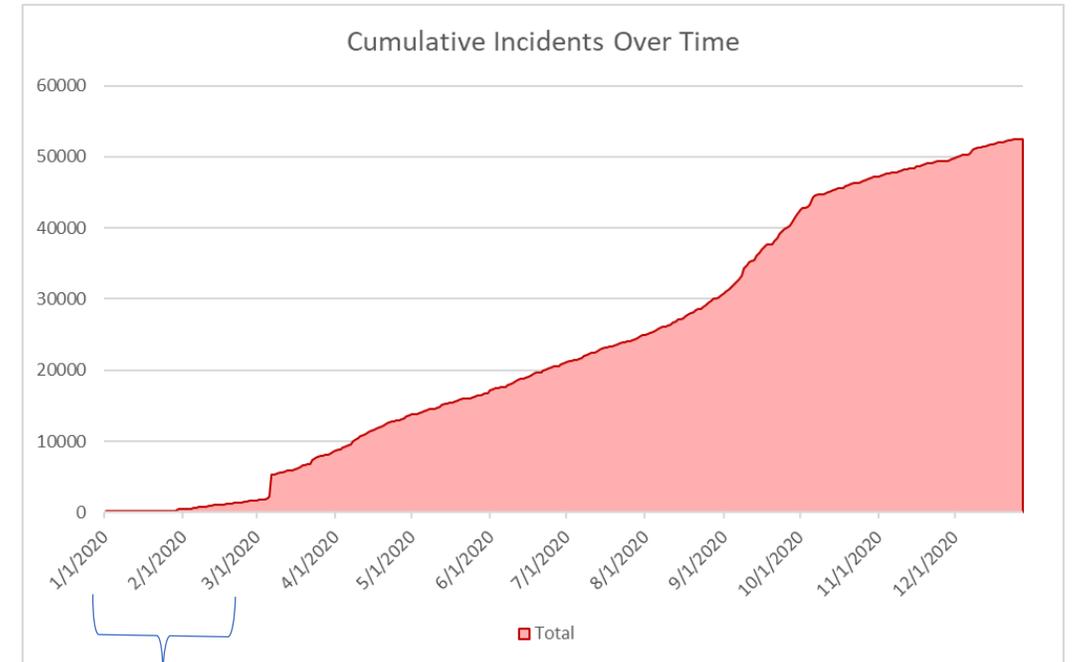
5. True Positives based on Cortex XSOAR Incidents between 01/01/2020 – 12/28/2020 of type “Phishing” or “NDIT – Phishing” where close reason is not “False Positive”

6. Incidents based on Cortex XSOAR Incidents between 01/01/2020 – 12/28/2020. This number is artificially low as all alerts/events were not being ingested into XSOAR prior to March 2020.

# Incidents by the numbers



Most tools were not integrated, count is artificially low



Most tools were not integrated, count is artificially low

# Cybersecurity Works Referenced

- THE STATE OF RANSOMWARE 2020 Results of an independent study of 5,000 IT managers across 26 countries; Sophos Security (May 2020). <https://www.sophos.com/en-us/medialibrary/Gated-Assets/white-papers/sophos-the-state-of-ransomware-2020-wp.pdf>
- Baltimore estimates cost of ransomware attack at \$18.2 million as government begins to restore email accounts; Baltimore Sun (May 2019). <https://www.baltimoresun.com/maryland/baltimore-city/bs-md-ci-ransomware-email-20190529-story.html>
- Osterman Research - The Evolving State of Network Security, 2018, Cited by InfoSecurity group (September 2018). <https://www.infosecurity-magazine.com/news/security-staffing-low-in-midsized/>
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