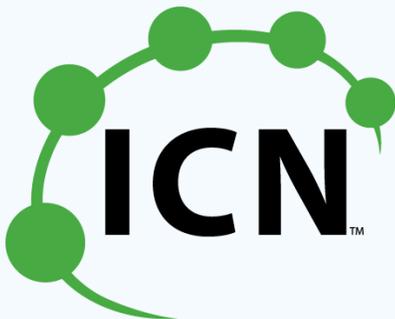**2022**

ANNUAL
REPORT

Providing High Speed Internet, Data, Voice, Security, & Consulting Services

ICN™

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This annual report highlights agency information between July 1, 2021 - June 30, 2022.

Iowa Telecommunications and Technology Commission

Barb Kniff McCulla, Chair | Robert Holz | Krista Wenzel | Timothy Lapointe | Steven Olson

Rob Sand, ex officio, State of Iowa Auditor | Dr. Matt Behrens, ex officio, Chief Information Officer

ICN Executive Team

Randy Goddard, Executive Director

Deb Evans, Chief of Staff | Mark Johnson, Chief Administrative Officer | Scott Pappan, Chief Technology Officer

November 28, 2022

The Honorable Kim Reynolds
Governor, State of Iowa
State Capitol
Des Moines, Iowa 50319

Dear Governor Reynolds:

On behalf of the Iowa Telecommunications and Technology Commission, I am submitting to you the Fiscal Year (FY) 2022 Annual Report of the Iowa Communications Network.

In FY 2022, many enhancements were completed benefiting the sectors we serve. The first accomplishment included finishing a multi-year refresh to the Network's core IP infrastructure. This upgrade allows for more capacity as our customers continue to ask for additional bandwidth year-after-year. Next, the State Firewall platform needed to be advanced to better secure State government information. In order to complete phase 1 of this project, ICN installed a new secure firewall platform which now segments each customer's network, instead of the prior consolidated structure. Lastly, with customer applications in the cloud, ICN added a Cloud Service for customers to receive a secure and private connection to direct express Cloud routes. These connections include Microsoft (Azure), Amazon (AWS), and Google Cloud, along with peering connections to an additional 250+ cloud providers.

The ICN takes great pride in being a valuable telecommunications and broadband asset for voice, data, security, and consulting services to support education, healthcare, government, and public safety users. As you will see in the information highlighted in this report, the ICN continues to play an important part in the education, health, safety, and welfare of all Iowans.

Please review our report for FY 2022. In FY 2023 the Commission and ICN staff will carry on with the mission of providing a statewide, innovative, secure, reliable network, and technology solutions that support increased broadband, accessibility to government, and economic growth for Iowans.

On behalf of the Commission and all ICN employees, we appreciate the opportunity to be of service.

Sincerely,

Barb Kniff McCulla
Chair, Iowa Telecommunications and Technology Commission

About Us

Mission: Provide a statewide, innovative, secure, reliable network, and technology solutions for education, healthcare, public safety, and government.

Who We Are

A State government agency that administers a state-of-the-art fiber optic network providing broadband and telecommunications services to authorized users.

Our business offices are located on the State Capitol Complex in Des Moines, and our hub and Network Operations Center are located at the Iowa National Guard Joint Forces Headquarters (JFHQ) in Johnston.

Authorized Users

The ICN is statutorily limited by the Code of Iowa, Chapter 8D, in who is permitted to utilize the Network.

ICN's authorized users include:

- K-12 Public and Private Schools
- Libraries
- Higher Education
- Hospitals and Clinics
- Public Safety
- State and Federal Government
- National Guard Armories

Public/Private Partnerships

In FY 2022, ICN reinvested a total of $23M back into the private sector with $9.51M of that going to private telecoms.

Services

- Internet
- Ethernet
- Security
  - DDoS Mitigation
  - Managed Firewall
- Cloud Connect
- Voice
- Colocation
- Structured Cabling
- Consultation

Agency Updates

Legislative Session Recap

ITTC Update
Commissioner Bob Holz reappointment was confirmed by the Senate on April 18, 2022.

Firewall & DDoS Mitigation Appropriation
ICN received a $1.5M appropriation from the Governor's original budget recommendation for Network Security: Firewall & DDoS Protection. This appropriation will ensure the continuation of critical cyber protection for State government agencies currently receiving these services at no cost.

Contracts Exceeding $1M
Code of Iowa Reference

ICN contracts entered into during FY 2022 exceeding $1 million, as required by the Code of Iowa, Section 8D.3(3)(f).

- Ciena 21-069

Looking Ahead to Fiscal Year 2023

Aggregation Equipment Upgrade
Our aggregation equipment and design improvements include implementation of the 10Gb converged aggregation network, which is the segment that operates between the Core and edge. This upgrade allows Ethernet and IP services to pass through the network on a redundant and more resilient infrastructure. The aggregation layer plays an important role in addressing the challenges of our customers by providing an efficient, diverse network with greater capacity.

State Firewall Decentralization
The second phase of the State Firewall decentralization includes taking 17 government agencies and giving them their own Palo Alto security solution. The ICN will look at providing enhanced capabilities that current firewalls provide like intrusion prevention, content filtering, anti-malware and more. The security solution will also explore enhanced reporting for agencies, as well as the possibility of multi-tenanting.

SIP Migration (Session Initiation Protocol)
The ICN recognizes the need to migrate from the legacy Public Switched Telephone Network (PSTN) infrastructure to a SIP trunking architecture. This allows the ability to plan and design new services that provide our customers access to additional unified communications (UC) applications. This is the pathway forward for voice services, which would allow the ability to retire the legacy platform.

Cloud Services
Our goal is to develop services that meet the needs of our customers. We will continue to expand connectivity for our customers to reach cloud services by using our direct express routes to Microsoft (Azure), Amazon (AWS), Google Cloud, and 250+ additional cloud providers.
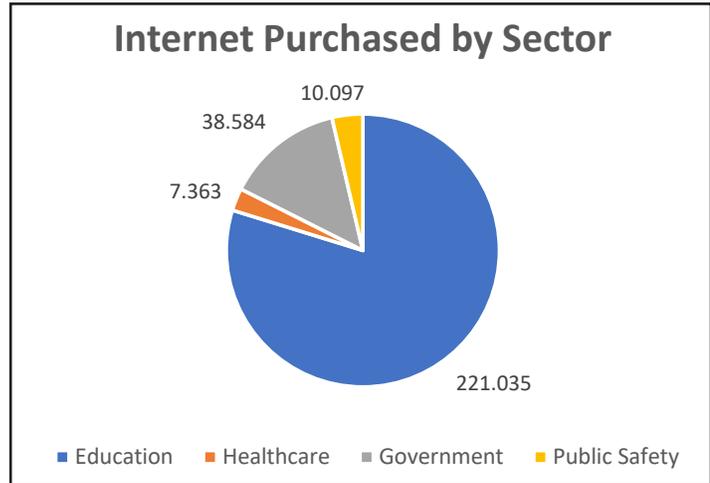
Service Updates

Internet

Internet Purchased by Sector

- Education 221.035 Gb
    - Higher Education 74.721 Gb
    - K-12 124.897 Gb
    - AEA 1.738 Gb
    - Libraries 4.033 Gb
- Healthcare 7.363 Gb
- Government 38.584 Gb
- Public Safety 10.097 Gb

Total Internet Purchased: 277.079 Gb

Internet Purchased by Sector

- Education - Healthcare - Government - Public Safety

Voice

Our VoIP platform is hosted from a cloud environment. To date, there are 177 active customer groups*, with 7,247 employee seats activated. The service provides relocation benefits during disaster recovery situations, no long distance or 800 expenses, and call encryption.
One building can incorporate multiple customer groups.

Voice Migrations During FY 2022:

- ICN coordinated a service migration to Lumen's Webex application from the previous Business Communicator application.
- A provider change with voice conferencing was completed. Customers migrated to PGi's Global Meet voice conferencing service. Larger users include the Judicial Branch and the Dept of Human Services.

Security

Distributed Denial-of-Service (DDoS) Mitigation is being used by 47 customers.

During the Last 12 Months:

- Detected 11,080 DDoS attacks on the State's Network.
- Longest DDoS attack was 7 hrs, 25 mins, 31 secs.
- Largest DDoS attack was 2.38TB (Terabyte).

Detected DDoS Attacks

- FY19 - FY20 - FY21 - FY22

IOWA COMMUNICATIONS NETWORK
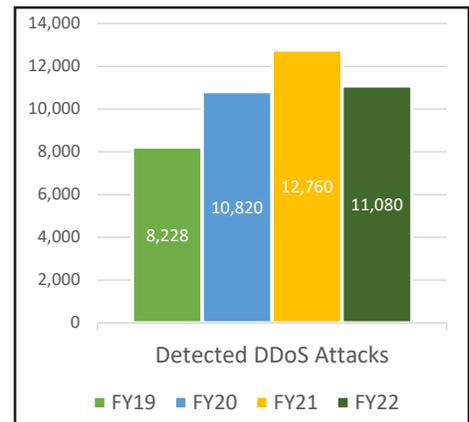
Accomplishments

Core Upgrade

The ICN completed a 100GB backbone upgrade across the State. This multi-year project integrated an IP/Ethernet infrastructure, which is scalable up to 200GB as needed.

The upgrade allows for more capacity as our customers continue to ask for additional bandwidth year-after-year. Doubling the capability to 200GB across the Core can be completed quickly by changing/adding optics and updating licensing.

During the transition, the ICN also upgraded its Internet Exchange Points (IXPs) to accommodate requests for direct connections to several national content providers like Amazon and Azure.

Benefits from this upgrade include scalability, redundancy, and the ability to connect to multiple local, regional, and national Internet exchanges.

Grants for Security

ICN was awarded three security grants from the Iowa Department of Homeland Security and Emergency Management (HSEMD) to continue to enhance the Network in January 2022.

The grants funded the following projects:

- Expanding the security camera system to three additional core Network locations.
- Adding a cybersecurity tool for monitoring.
- Increasing the capacity of our fiber network to deliver more security services.

State Firewall Upgrade

In March 2022, a team of security professionals within the ICN's network operations division, completed a major project of upgrading the State Firewall to a new hardware platform with enhanced security capabilities.

Since 1998, ICN has operated the State Firewall for the State of Iowa's Executive and Judicial branches of government. In order to better secure State government information, it was determined that the best practice would be to integrate a new firewall platform that could segment each customer's network, instead of the prior consolidated firewall.

The upgrade resulted in the separation of the firewall platform into four segments. The ICN and three customers were moved onto their own firewall appliances, and additional agencies were also migrated to a separate firewall.

This firewall upgrade is considered a two-phase project. The funding for this first phase was included in a Firewall & DDoS Protection appropriation from FY 2021, which ensured the continuation of critical cyber protection for State government agencies. The second phase of the firewall upgrade includes further segmenting those additional agencies onto their own firewalls.

Accomplishments, cont...

Equipment Upgrades Completed for Healthcare Network

In November 2021, ICN completed the multi-year project of upgrading physical hardware or virtual connections to 191 Iowa hospital and clinic locations statewide. These locations are connected to the Iowa Rural Health Telecommunications Program (IRHTP), which is the healthcare network managed by the Iowa Hospital Association.

Beginning in 2018, the task for the ICN was to replace aging network equipment to enhance redundancy and increased bandwidth. Of the 191 fiber-fed facilities, the ICN upgraded 44 core/aggregation sites and approximately 90 edge locations (hospitals and clinics).

Healthcare is a 24/7/365 industry, and in order to keep existing broadband services up and running for the connected hospitals and clinics, ICN built a parallel Multiprotocol Label Switching (MPLS) Network utilizing Ciena equipment.

> " By performing the upgrade in parallel, it allowed for limited downtime for our hospitals, which is critical to their operations and the safety of their communities. "
>
> **Corey Martin**
> Iowa Hospital Association

Direct Cloud Connections

Many of our customers use cloud applications, and recently have requested a secure and private direct connection to cloud providers.

In FY 2022, ICN added direct express routes to Microsoft (Azure), Amazon (AWS), and Google Cloud and added peering connections to an additional 250+ cloud providers.

Below are a few reasons why ICN users connect to the private cloud.

1. Improved network performance occurs when the cloud is utilizing a separate connection.

2. A direct transport connection means a safer connection versus a connection on the public Internet.

3. Network scalability can occur to meet bandwidth demand.

SYBAC Complete Security Training

Students that make up ICN's Statewide Youth Broadband Advisory Council (SYBAC) completed Fortinet's Network Security Expert 1 certificate. This certification provided an understanding of the ever-increasing threat landscape and common concepts.

During the school year, the students learned about a variety of topics, such as:

- Technology in healthcare.
- FirstNet and how it relates to the Iowa HSEMD and 9-1-1 initiatives.
- The importance of cybersecurity, protecting Iowa schools.
- ICN's robust and statewide infrastructure.

IOWA COMMUNICATIONS NETWORK

What Sets ICN Apart

Since the early 1990s, the ICN has been dedicated to our customers, providing innovative, secure and reliable connectivity using the statewide fiber optic Network.

Private Network

The closed Network is ONLY available for our education, healthcare, government, and public safety users.

This is highly valued for redundancy, reliability, and security.

Buried Fiber Optics

Our greatest asset is our fiber optics, which are mostly buried under the ground. This means our Network and connectivity is protected from inclement weather.

The Network is **approximately 3,400 miles of owned fiber** and leased connections making up the remaining miles of the network.

Network Redundancy

The Network operates a 100GB Core, which includes an optical ring architecture that provides redundant paths.

With over **170+ rings**, this allows data traffic to flow bidirectional establishing better network reliability. If a path is damaged due to an unplanned fiber cut, the equipment will automatically reroute the traffic, which reduces the chance of customer downtime.

Local Support
Network Operations Center

When support is needed, our customers can rest assured that they will be contacting personnel from Iowa.

Our Iowa-based NOC is **always available** 24/7/365.

Uptime / Reliability

As a telecommunications carrier, the ICN's responsibility is ensuring that the Network is reliable and highly available when delivering services. Our Network demonstrates 99.999% reliability.

For the last 5 years, the core network's uptime has been at 100%.

Peering Arrangements

Public and private peering allows networks to connect to each other directly without having to carry traffic across the Internet.

ICN has national and local peering arrangements from Microsoft, Apple, Google, Amazon, and 250+ more connections.

Google makes up over 50% of ICN's bandwidth traffic. We attribute this to content in the classrooms and college students in the dorms.

IOWA COMMUNICATIONS NETWORK

Financial Charts

The "Operating and Capital Asset Revenues" graph shows ICN generated over $31M in revenues from billed services to authorized users.
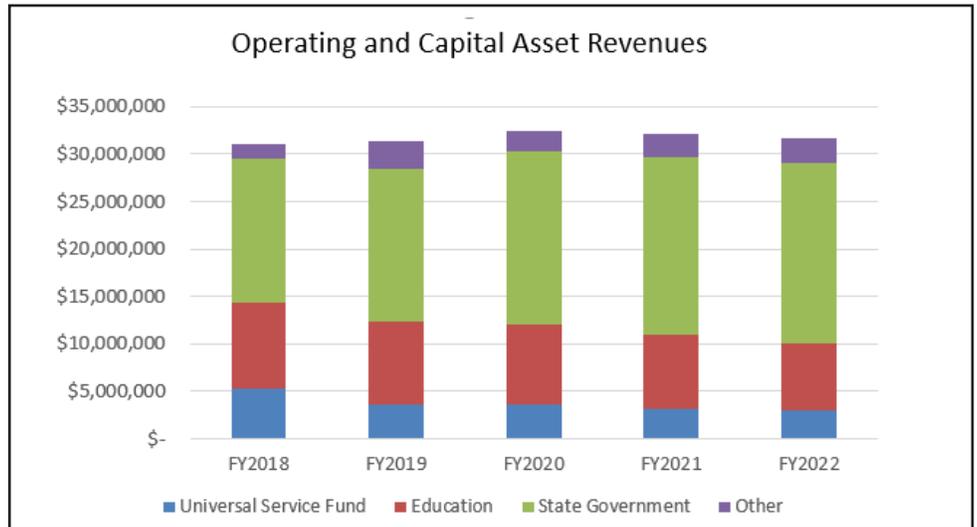
The "Payments by Vendor Type" graph shows how the revenue generated is used in supporting the network.

The largest ICN expenses in FY22 were the network maintenance and payments to vendor telecommunication companies supplying voice, data transport, and Internet services. Payment for the cost of the "last-mile" connections that are leased from telecommunications companies is directed back to Iowa's private sector providers.
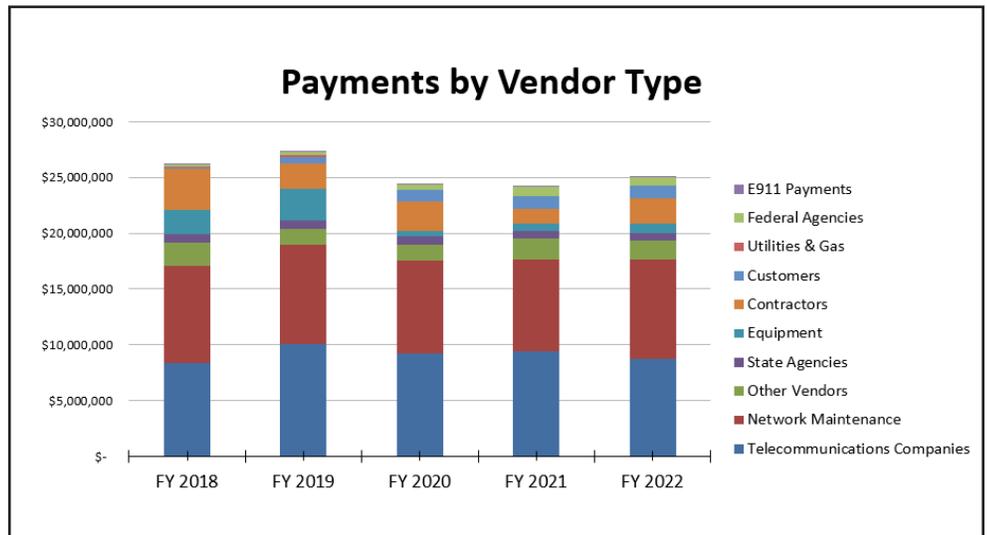
Expenses to outside vendors only. Excludes payroll and employee reimbursements.

ICN's financial statements are shown using Generally Accepted Accounting Principles (GAAP). As a government entity in a fee-for-service environment, ICN uses accrual accounting with a measurement focus emphasizing the matching of revenues with costs of services including depreciation of assets such as network equipment and fiber. Most other State of Iowa agencies use the modified accrual accounting method with a measurement focus emphasizing control and accountability over the raising and spending of public monies.

Operating Budget Proposal & Capital Plan For Fiscal Year Ending June 30, 2022   Revised 5/12/2022

	FY2022 through February 28, 2022 12 Month Projected Actuals	FY22 Budget	FY23 Budget Proposal
REVENUES			
Voice Revenue	8,397,125	7,113,925	8,472,975
Transport Revenue	13,519,872	13,933,004	14,154,913
Internet Revenue	6,272,488	7,120,112	6,396,022
Security Revenue	362,588	427,701	531,267
Colocation Revenue	227,901	226,880	228,780
Outside Plant Build Out/Maintenance Revenue	1,953,854	2,018,638	2,435,718
Network Professional Services Revenue	18,232	31,200	23,000
Structured Cabling Revenue	50,061	25,440	50,000
Interest Revenue	14,533	92,000	11,796
Other Revenue	90,407	32,515	21,568
Gross Revenues	$ 30,907,061	$ 31,021,415	$ 32,326,039
DIRECT EXPENSES			
Voice Direct Expense	5,583,839	5,227,674	5,388,928
Transport Expenses	5,010,636	5,056,107	4,937,823
Internet Expenses	740,608	757,972	700,528
Security Expenses	103,166	91,624	89,126
Colocation Expenses	-	3,000	-
Outside Plant Build Out Expenses	173,106	348,088	601,762
Network Professional Services Expenses	9,961	19,000	12,350
Structured Cabling Expense	28,396	19,200	28,400
Total Direct Expenses	$ 11,649,712	$ 11,522,665	$ 11,758,917
Gross Margin	$ 19,257,349	$ 19,498,750	$ 20,567,122
OPERATING EXPENSES			
System Maintenance and Technical Support	6,746,030	6,545,557	6,887,456
Outside Plant Maintenance Expenses	2,354,519	1,746,654	2,551,772
Operating Professional Fees	89,387	375,000	94,095
Other Operating Expenses	518,917	623,295	674,515
Total Operating Expenses	$ 9,708,853	$ 9,290,506	$ 10,207,838
Net Margin	$ 9,548,496	$ 10,208,244	$ 10,359,284
GENERAL AND ADMINISTRATIVE			
Personnel Services	9,393,289	9,653,372	9,025,562
Travel	39,762	129,141	33,196
Other General & Administrative Expenses	724,484	802,305	700,810
Professional Fees	31,023	30,000	85,000
Total G, S, and A Expenses	$ 10,188,558	$ 10,614,818	$ 9,844,568
Net Cash (Deficit) from Operations	$ (640,062)	$ (406,574)	$ 514,716
CAPITAL BUDGET			
Capital Expenditures	439,422	837,000	514,716
Net Equipment Purchases	$ 439,422	$ 837,000	$ 514,716
Net Cash (Deficit)	$ (1,079,484)	$ (1,243,574)	$ -

Fiscal Year 2022 Financial Information

Balance Sheet (Statement of Net Assets)
For the Thirteen Months Ending June 30, 2022

ASSETS				
Cash & Cash Equivalents	$6,239,218.25	$8,424,025.63	($2,184,807.38)	(25.94%)
Accounts Receivable	3,461,029.69	3,765,690.36	(304,660.67)	(8.09%)
Interest Receivable	9,584.49	4,084.20	5,500.29	134.67%
Inventory	1,090,401.82	1,059,725.40	30,676.42	2.89%
Prepaid Expenses	1,264,840.41	914,537.90	350,302.51	38.30%
Total Current Assets	12,065,074.66	14,168,063.49	(2,102,988.83)	(14.84%)
Fixed Assets(Net)	6,738,504.97	8,998,680.85	(2,260,175.88)	(25.12%)
Lease Assets(Net)	4,866,096.58	3,865,778.02	1,000,318.56	25.88%
Total Deferred outflows of resources	1,126,645.54	1,498,903.96	(372,258.42)	(24.84%)
TOTAL ASSETS	**$24,796,321.75**	**$28,531,426.32**	**($3,735,104.57)**	**(13.09%)**

LIABILITIES				
Accounts Payable & Accruals	2,705,865.72	2,642,636.94	63,228.78	2.39%
Sick Leave Incentive Program - Retirees	38,976.00	25,721.00	13,255.00	51.53%
Current Portion, Lease Liability	613,583.41	357,052.07	256,531.34	71.85%
Unearned Revenue	1,241,913.15	1,532,440.11	(290,526.96)	(18.96%)
Short-Term Compensated Absences	732,222.04	1,053,023.52	(320,801.48)	(30.46%)
Sick Leave Incentive Program - Employees	59,856.49	80,255.87	(20,399.38)	(25.42%)
Other Post-Employment Benefits	49,384.05	44,858.30	4,525.75	10.09%
Total Current Liabilities	5,441,800.86	5,735,987.81	(294,186.95)	(5.13%)
LT Sick Leave Incentive Program - Retirees	54,428.00	54,428.00	0.00	0.00%
Long-Term Lease Liability	4,252,513.20	3,508,725.95	743,787.25	21.20%
Long-Term Compensated Absences	227,257.68	84.48	227,173.20	268907.67%
LT Sick Leave Incentive Program - Employees	609,772.99	691,551.37	(81,778.38)	(11.83%)
Accrued Sick Leave	69,434.20	71,423.27	(1,989.07)	(2.78%)
Other Post-Employment Benefits	882,259.95	831,454.85	50,805.10	6.11%
Net Pension Liabilities	117,158.00	6,182,152.00	(6,064,994.00)	(98.10%)
Total deferred inflows of resources	5,278,489.00	781,905.68	4,496,583.32	575.08%
Total Long-Term Liabilities	11,491,313.02	12,121,725.60	(630,412.58)	(5.20%)
TOTAL LIABILITIES	**16,933,113.88**	**17,857,713.41**	**(924,599.53)**	**(5.18%)**

FUND EQUITY				
Retained Earnings	7,863,207.87	10,673,712.91	(2,810,505.04)	(26.33%)
TOTAL FUND EQUITY	**7,863,207.87**	**10,673,712.91**	**(2,810,505.04)**	**(26.33%)**
TOTAL LIABILITIES & FUND EQUITY	**$24,796,321.75**	**$28,531,426.32**	**($3,735,104.57)**	**(13.09%)**

Fiscal Year 2022 Financial Information

Statement of Changes in Net Position
For the Twelve Months Ending June 30, 2022

	June Fiscal Year 2022 Year to Date	June Fiscal Year 2021 Year to Date	Increase(Decrease) Amount	Percent
ASSETS				
Cash & Cash Equivalents	$6,239,218	$8,424,026	($2,184,807)	-25.94%
Accounts Receivable	3,461,030	3,765,690	(304,661)	-8.09%
Interest Receivable	9,584	4,084	5,500	134.67%
Inventory	1,090,402	1,059,725	30,676	2.89%
Prepaid Expenses	1,264,840	914,538	350,303	38.30%
Total Current Assets	12,065,075	14,168,063	(2,102,989)	-14.84%
Fixed Assets(Net)	12,211,607	12,864,459	(652,852)	-5.07%
Total Assets	$24,276,681	$27,032,522	($2,755,841)	-10.19%
Total Deferred outflows of resources	1,126,646	1,498,904	(372,258)	-24.84%
Total Assets And Deferred Outflows	25,403,327	28,531,426	(3,128,099)	-10.96%
LIABILITIES				
Accounts Payable & Accruals	2,705,866	2,642,637	63,229	2.39%
Sick Leave Incentive Program - Retirees	38,976	25,721	13,255	51.53%
Unearned Revenue	1,241,913	1,532,440	(290,527)	-18.96%
Short-Term Compensated Absences	732,222	1,053,024	(320,801)	-30.46%
Sick Leave Incentive Program - Employees	59,856	80,256	(20,399)	-25.42%
Short-Term OPEB	49,384	44,858	4,526	10.09%
Total Current Liabilities	4,828,217	5,378,936	(550,718)	-10.24%
LT Sick Leave Incentive Program - Retirees	54,428	54,428	0	0.00%
Long-Term Compensated Absences	227,258	84	227,173	268907.67%
LT Sick Leave Incentive Program - Employees	609,773	691,551	(81,778)	-11.83%
Accrued Sick Leave	69,434	71,423	(1,989)	-2.78%
Other Post-Employment Benefits	882,260	831,455	50,805	6.11%
Net Pension Liabilities	117,158	6,182,152	(6,064,994)	-98.10%
Total Long-Term Liabilities	1,960,311	7,831,094	(5,870,783)	-74.97%
Total Liabilities	6,788,528	13,210,030	(6,421,501)	-48.61%
Total deferred inflows of resources	5,278,489	781,906	4,496,583	575.08%
NET POSITION				
Unrestricted	7,863,208	10,673,713	(2,810,505)	-26.33%
Total Net Position	7,863,208	10,673,713	(2,810,505)	-26.33%

IOWA COMMUNICATIONS NETWORK

2022

ANNUAL

REPORT

Iowa Communications Network
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400 E. 14th Street
Des Moines, Iowa 50319

icn.iowa.gov

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