

# Iowa Communications Network: Serving Iowans in a Time of Crisis

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By Stephanie Stenberg, Director, Internet2 Community Anchor Program

When the pandemic completely changed how we thought of teaching and learning, [Iowa Communications Network \(ICN\)](#), the state-owned research and education network, made quick decisions to adapt its business methods and increase connections for all the community anchor institutions it serves throughout the state. ICN serves K-12 schools, higher education, public safety entities, hospitals and clinics, state and federal government, National Guard armories, and libraries.

## Helping Schools and Students Stay Connected

ICN provided critical help to its connected K-12 schools and higher education institutions to keep them up and running when students needed it most.

"K-12 schools increased their bandwidth right away. With our fiber network and our equipment, we were able to make changes within one to three hours to accommodate their needs," said Randy Goddard, executive director of ICN. Close communication with community colleges, private colleges, area education agencies, and other schools helped ICN meet such a big challenge in such a short time.

ICN also tackled another critical issue: helping to solve their rural areas' unique challenges when it came to broadband access for K-12 and college students.

"Being a rural state, Iowa has its challenges in providing broadband to students in the sense of the federal definition – download speeds of 25 megabits per second and upload speeds of up to 3 megabits per second," Goddard shared. ICN partnered with [Eastern Iowa Community Colleges](#) to set up public Wi-Fi connections in parking lots to give students the internet access they need.



## Helping State Government Agencies and Statewide Emergency Briefings

ICN also helped the state government adapt quickly to the new reality of the pandemic. They increased bandwidth for state agencies to accommodate the number of employees connecting to the network while working from home, often increasing connections from one to three gigabits per second (Gbps).

Prior to the pandemic, ICN worked with a managed service provider to invest in Voice over IP (VoIP) technology and a virtual client. This allowed all government workers at the state level to maintain Continuity of Operations and Continuity of Government when they began to work from home because employees could continue answering their phones and providing services to Iowans as if they never left the office.

ICN increased bandwidth to support Governor Kim Reynolds' daily pandemic briefings from the State Emergency Operations Center (SEOC). To keep reporters and the media socially distanced, ICN supplied an Ethernet connection directly from the SEOC to the Iowa Public Broadcasting Service station.

ICN also helped the Iowa Judicial Branch, Iowa Department of Corrections, and other public safety agencies manage their needs. For example, ICN partnered with the Department of Corrections to provide free weekly calls to help keep quarantined inmates connected to their families and others outside the facility in lieu of in-person visits.

## Helping Healthcare Institutions Adapt and Stay Connected

ICN connects 100+ hospitals and 150+ clinics either directly to the ICN's statewide network or through its partnership with the Iowa Hospital Association (IHA), which administers the Iowa Rural Health Telecommunications Program. Various healthcare entities required

“The hospital utilized Zoom to conduct weekly medical staff meetings specific to COVID-19,” said Dr. Kyle Ulveling, chief medical officer and cardiologist at St. Anthony Regional Hospital in Carroll, Iowa. The increased broadband allowed 60 or more medical providers from St. Anthony and from other hospitals and clinics throughout the region to participate in the meetings.

The pandemic also suspended most regular in-person doctor visits, requiring a quick pivot to telehealth to bridge the gap.

“During this pandemic, we have been in contact with our patients at their most vulnerable times,” said Deb Burnett, director of Mental Health Services at St. Anthony Regional Hospital. “Telehealth visits with their medical provider are often the only connection our mental health patients have to the outside world.”

## A Dual Disaster for Iowa: The Pandemic and Derecho

Complicating the pandemic was the fact that Iowa was also dealing with the fallout from a derecho, which the National Oceanic and Atmospheric Administration (NOAA) estimated to be [the costliest thunderstorm disaster in United States history](#), at \$7.5 billion. In Cedar Rapids alone, nearly all of its 133,000 residents lost power.

“We had two disasters working at the same time right away in the spring,” Goddard explained. Schools whose primary internet service provider had been knocked out during the derecho turned to ICN for help. ICN often serves schools as a secondary internet provider in the event of natural disasters or cyberattacks to ensure continuity of service. As a bonus for schools, ICN also provides robust DDoS and managed firewall services to help keep the network secure.

ICN's ability to address the dual emergencies of the pandemic and the derecho is directly related to its commitment to planning ahead for worst-case scenarios and constantly upgrading its technology. ICN regularly runs all-hands tests to make sure its organization and staff can withstand catastrophic incidents. Just one month before the pandemic, ICN sent all its staff to work from home to test that they could stay operational and their virtual private networks (VPNs) were in working order in the face of an emergency.

## Looking Ahead: ICN's Investment in Infrastructure and Iowans

ICN continues to be a state-of-the-art network and its future is bright. The completion of a multi-year network upgrade to its core IP infrastructure is on the horizon. This advancement will enable the network to operate at 100 Gbps, with an upgrade path of up to 200 Gbps and beyond. Virtualization and automation of the statewide network is also a goal for ICN, which will ease network complexity and prepare for implementing technologies such as firewall as a service (FWaaS), cloud computing services, and 5G technologies.

ICN's healthcare users will benefit from a separate project that upgraded equipment at 191 locations for the Iowa Rural Health Telecommunications Program's network. Those locations will benefit from enhanced redundancy and increased bandwidth.

Infrastructure enhancements are also happening for ICN's public safety users. Iowa-based Public Safety Answering Points (PSAPs) will benefit from ICN delivering both wireless and wireline 911 services. In addition, ICN established a new partnership with FirstNet and AT&T to wirelessly connect redundant routers back to the PSAPs for backup connectivity.

ICN is also looking forward to beginning work with Iowa State University, which received a major [National Science Foundation research grant to drive innovation in rural broadband connectivity](#).

## About Iowa Communications Network (ICN)

The Iowa Communications Network is an independent state agency that administers Iowa's statewide fiber optic telecommunications network. It provides telecommunications services to its authorized users, including high-speed broadband internet, data, voice (phone), security, and consulting services.

- On the web: <https://icn.iowa.gov/>
- Twitter: [@IowaCommNetwork](#)
- Facebook: [www.facebook.com/IowaCommunicationsNetwork](http://www.facebook.com/IowaCommunicationsNetwork)
- LinkedIn: [www.linkedin.com/public-profile/in/iowacomunicationsnetwork/](http://www.linkedin.com/public-profile/in/iowacomunicationsnetwork/)

## Network Statistics

Education Locations Served:

- 348 Public and Private K-12 Locations
- 9 Area Education Agencies (AEA) (45 Sites)
- 15 Community Colleges (30 Sites)



- 103 Hospitals
- 155 Clinics and Other Healthcare Providers

Public Safety Locations Served:

- 113 Public Safety Answering Points (PSAPs) for Both Wireless and Wireline 911 Services
- 179 Department of Public Safety and Iowa Homeland Security & Emergency Management Locations
- 9 Iowa Department of Corrections Institutions
- 38 Iowa National Guard Locations

Government Locations Served:

- 133 Judicial Branch Locations, With Connections to All County Courthouses
- 265 Department of Transportation Locations, With Connections to Maintenance Garages, Driver's License Stations, and Construction Offices
- 158 Department of Human Services Locations, With Connections to DHS Offices Across the State
- 59 Workforce Development Locations, With Connections to Satellite Offices
- 231 Additional State, Federal, and Miscellaneous Government Locations

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