ONENET IMPACT REPORT

OKLAHOMA'S NETWORK FOR RESEARCH, EDUCATION, HEALTH CARE AND GOVERNMENT

OneNet®

Advancing Technology Across Oklahoma

ONENET BY THE NUMBERS

2,819 miles
of high-speed fiber
backbone

500+ million gigabytes
of data transported
annually

800+ gigabits
per second to the rest
of the world

1,450+ connections
spanning the state

OKLAHOMA'S RESEARCH & EDUCATION NETWORK

For more than 25 years, OneNet has served as Oklahoma's research and education network. Our mission focuses on meeting the requirements of our state's researchers and educators, from K-12 schools to career technology centers to colleges and universities. Through our efforts to provide research-grade connectivity and leverage our network to enhance education, OneNet has become a leader in the national research and education community.

In addition to serving education, OneNet provides high-speed connectivity and innovative solutions for libraries, research institutes, health care providers, and government agencies at all levels — local, state, federal and tribal.

Whether it's world-class research initiatives, digital educational resources or telemedicine visits, OneNet's mission to advance technology across Oklahoma is making it possible for Oklahomans to connect with each other and with all types of organizations around the world.

OKLAHOMA STATE REGENTS
FOR HIGHER EDUCATION
Improving our future by degrees

OneNet is a division of the Oklahoma State Regents for Higher Education

ADVANCING OKLAHOMA RESEARCH, POWERING BIG DATA MOVEMENT AROUND THE GLOBE

OneNet has a long history of advancing research in Oklahoma. OneNet's 100Gbps research ring, regional partnerships and connection to Internet2 are expanding possibilities for Oklahoma researchers by increasing the capacity for big data movement. As researchers drive demand to move big data, OneNet has strategically positioned the state to participate in world-class, global research, including:

► Oklahoma Center for High Energy Physics — Collaborates with 42 countries on the ATLAS project

► University of Oklahoma's Center for Analysis and Prediction of Storms — Produces high-resolution regional climate simulations and storm-scale ensemble predictions

► Oklahoma State University's High Performance Computing Center — Requires moving high-volume data for brain imaging research

► University of Oklahoma's Advanced Radar Research Center — Generates abundant radar data for storm research and application

OneNet is Oklahoma's connector to Internet2's nationwide 400Gbps research and education network. Internet2's recent Next Generation Infrastructure will quadruple OneNet's national research and education connectivity, improving our capabilities to meet data transfer requirements for Oklahoma's higher education institutions.
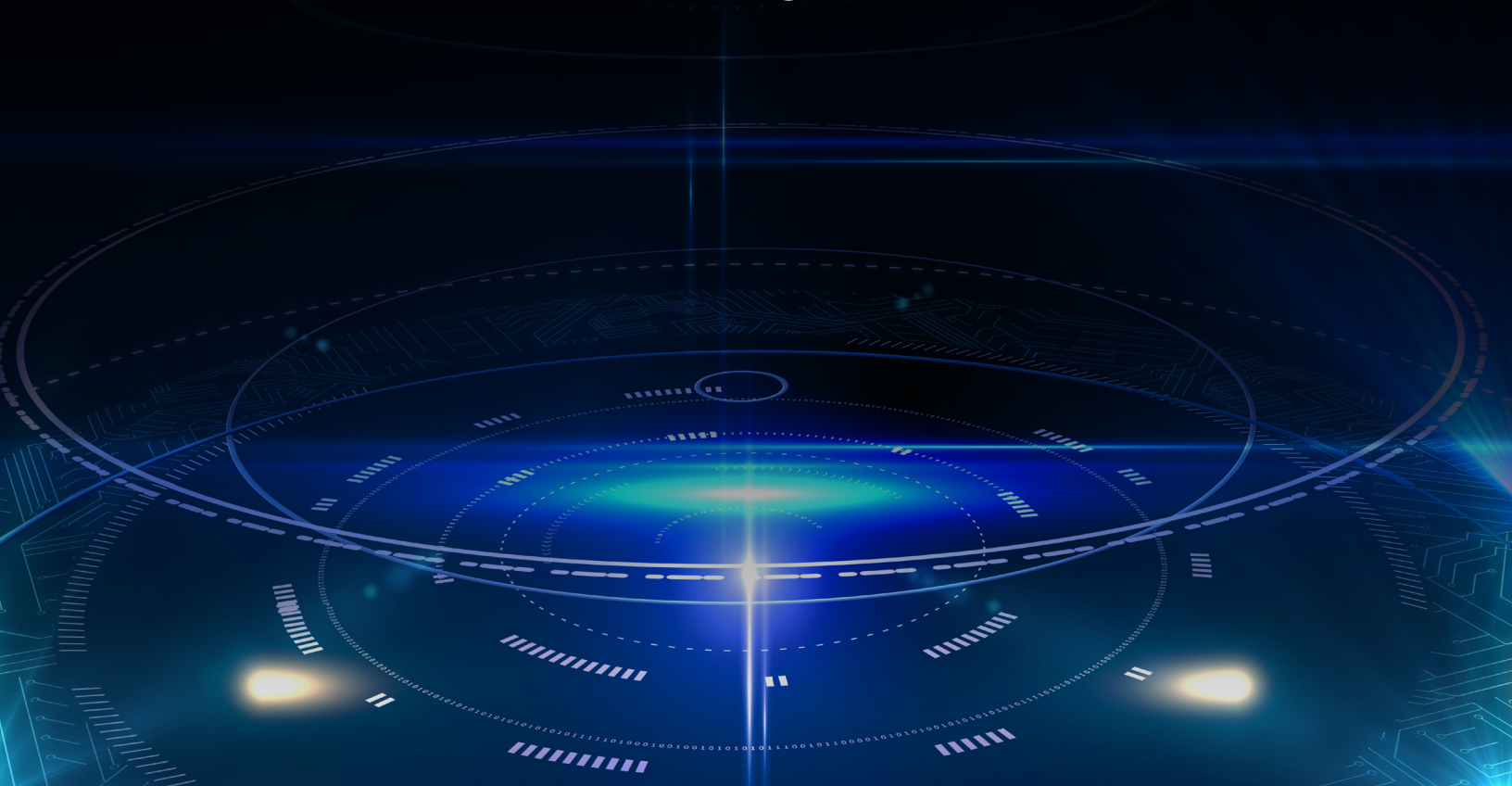
OKLAHOMA'S DEDICATED RESEARCH NETWORK

OneNet's high-speed network has helped Oklahoma scientists and researchers secure nearly $54 million in grants since 2009.

In the last two years, the National Science Foundation awarded OneNet and the State Regents three Campus Cyberinfrastructure grants to expand Oklahoma's research network — a part of OneNet's network fine-tuned for research data. The OneOklahoma Friction Free Network (OFFN) is a 10 and 100 Gbps research network that provides higher education institutions with a dedicated route to internet and research networks that is much faster than traditional internet highways. This alternate pathway allows researchers to transmit data at higher speeds.

Currently, the OFFN network connects 17 colleges and universities to cyberinfrastructure and supercomputing resources. The most recent awards will connect four additional smaller campuses to the network.

MAP KEY

OFFN	● (orange circle)
MORe-OFFN	■ (red square)
EVER-MORe-OFFN	◆ (yellow diamond)
SI-MORe-OFFN	▲ (green triangle)
ESI-MORe-OFFN	★ (purple star)
CaRE-MORe-OFFN	✦ (blue burst)

RSU
OSU
LU
TU
ORU
NSU
OC
UCO
OSU-OKC
OCU
CMN
SWOSU
RCC
OSUIT
OU
USAO
CU
ECU
MSC
SE

Connecting communities to high-speed services that expand access and transform education, research, health care and government.

EXPANDED REGIONAL CONNECTIONS

OneNet is building on regional partnerships to boost connectivity in the state of Oklahoma and throughout the southcentral region. OneNet's geographic location as a crossroads uniquely positions the network to expand high-speed services across the region.

Research and Education Networks

Multiple research and education networks are participating in the Midsouth U.S. Internet Exchange or MUS-IX, with the goals of increasing connectivity, lowering costs and bringing more content to member states. The consortium includes OneNet in Oklahoma, ARE-ON in Arkansas, LEARN in Texas and LONI in Louisiana. Consortium members are provisioning fiber and wave services across state lines to deploy more direct connections among these networks. OneNet's connection to Internet2 facilitates our connections with MUS-IX participants.
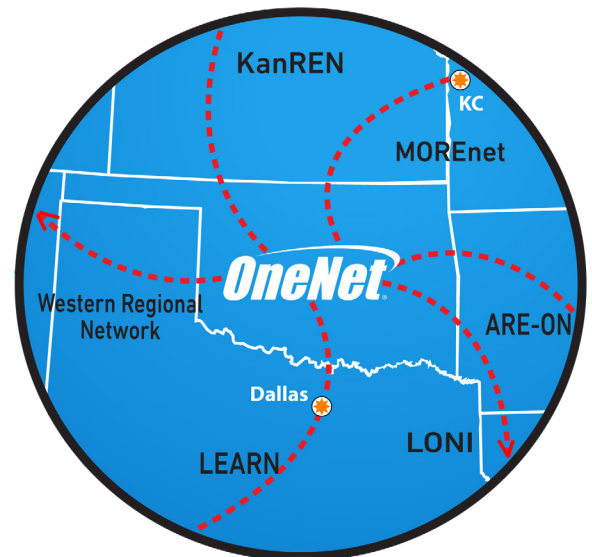
Regional Networks

OneNet's current partnership with the Great Plains Network and our access to the Western Regional Network through Internet2 provide regional connectivity for the southcentral states and connections to the West Coast. OneNet's connection to Internet2's high-speed, nationwide network extends this connectivity across the country.

Internet Exchange Oklahoma City

OneNet, along with Oklahoma data centers and telecommunications providers, have created a new partnership, the Internet Exchange Oklahoma City or iX-OKC. OneNet is facilitating fiber connections into Oklahoma City area data centers, where participants connect with OneNet's and one another's networks. iX-OKC partners can reduce costs through shared services and direct network connections.

Regional Connectivity

OneNet's regional partnerships power high-speed bandwidth, connecting the southcentral region across the country and around the globe.

OKLAHOMA'S PARTNER IN EDUCATION

Since 1996, OneNet has operated as a partner with higher education. OneNet's network is built upon the higher education system across the state, with OneNet's network gear housed at 40 higher education campus locations. OneNet provides connectivity for the higher education institutions and in return, receives space in the institutions' data centers and support for our equipment. This partnership generates millions in savings each year and enables Oklahoma's students to become globally-engaged citizens through reliable connectivity.

OneNet provides 1.5 Terabits per second of bandwidth to higher education institutions.

OneNet's partnership with education goes beyond colleges and universities. OneNet serves about half of the public K-12 school districts across the state, reaching half of Oklahoma's students. OneNet also serves career technology centers and public libraries. As a provider for the E-Rate federal funding program since its inception, OneNet's goal has been to expand high-speed broadband services to Oklahoma's rural communities and enhance the affordability of these services. OneNet remains committed to ensuring that Oklahoma's students can participate in today's digital learning initiatives, so they are prepared for work and educational opportunities in our increasingly virtual world.

Connecting OETA Viewers to Educational Television

OneNet's commitment to education extends to educational television and the 650,000 viewers who tune in to the Oklahoma Educational Television Authority (OETA) weekly. OneNet connects OETA's towers to a fiber network, improving both reliability and quality of service for OETA's viewers. The fiber connections also create significant annual cost savings for the agency.

Enabling Oklahoma's students to become globally-engaged citizens through reliable connectivity

ONENET CONNECTS

57 College & University Campus Locations

273 K-12 School Districts

71 Libraries

47 Career Technology Center Campuses

798 Government Agency Sites

61 Hospitals & Clinics

10 Tribal Agency Sites

36 Research & Other Agencies

Data as of 10/22

PUBLIC-PRIVATE PARTNERSHIPS

Since its inception, OneNet has partnered with local telecommunications and cable providers to deliver broadband services to subscribers across the state. This partnership assists those we serve in finding affordable broadband options, while returning most of the subscriber fees to local communities. OneNet is a middle-mile internet service provider. This means we operate a network that connects communities across the state. We depend on local telecommunications and cable companies to provide the connection from our network to the subscriber's site, which is called the last-mile connection. OneNet greatly values the local companies who partner with us to provide last-mile services. Last year, OneNet paid last-mile providers nearly $12 million to connect subscribers to our network. These subscriber fees are returned to local providers to support local broadband services.

OneNet reinvested nearly $12 million statewide last year through public-private partnerships

CONNECTING RURAL OKLAHOMA

Completed in 2013, the Oklahoma Community Anchor Network (OCAN) connects rural communities to high-speed broadband services in 35 Oklahoma Counties. Through management and operation of this 10Gbps network, OneNet provides new options for connectivity for education, health care and public safety institutions in previously underserved communities, so more Oklahomans have access to the resources needed to succeed in their communities and beyond. In addition, through OneNet's partnerships with local telecommunications providers, OCAN services extend to the private sector, creating opportunities for small businesses and advancing economic growth.
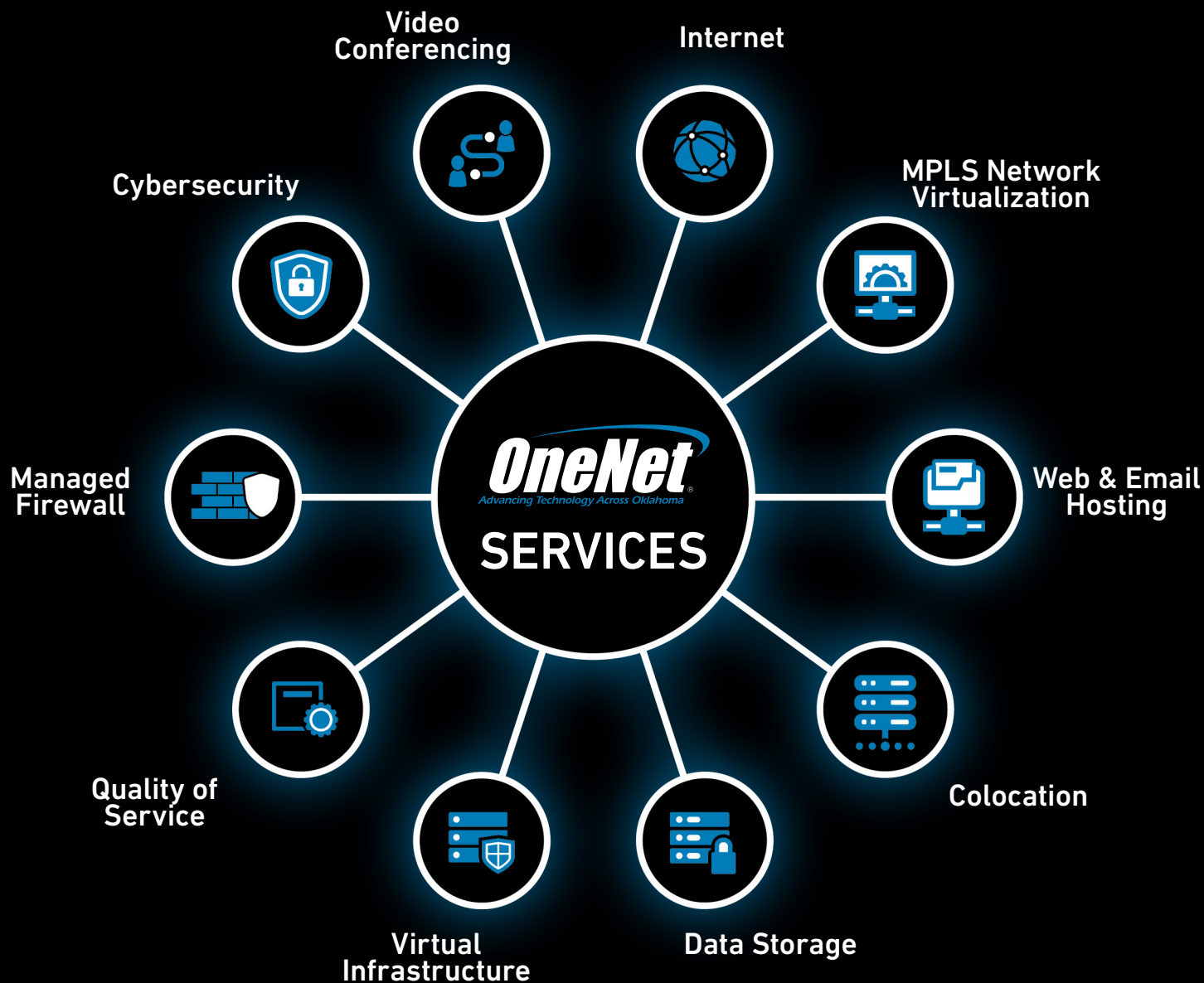
1,100 MILES OF HIGH-SPEED FIBER

93 COMMUNITY ANCHOR INSTITUTIONS

35 OKLAHOMA COUNTIES

Ensuring Oklahomans have access to the resources needed to succeed in their communities and beyond

Video Conferencing

Internet

Cybersecurity

MPLS Network Virtualization

OneNet *Advancing Technology Across Oklahoma* **SERVICES**

Managed Firewall

Web & Email Hosting

Quality of Service

Colocation

Virtual Infrastructure

Data Storage

OneNet services are for education, research, health care and government agency subscribers.

ADVANCING TECHNOLOGY IN AN EVOLVING WORLD

OneNet's network and services must evolve to meet the growing technology needs of communities in a world where connections are increasingly virtual. OneNet makes continual enhancements to our service offerings to better meet our subscribers' needs in this new environment.

Above-the-Net Services

In addition to internet connectivity, OneNet offers a variety of other services that meet our subscribers' technology needs. Most recently, Zoom video conferencing has been our most popular service. OneNet's statewide Zoom purchasing program for educational subscribers has connected thousands to virtual meetings and remote learning. The program offers significant cost savings for Zoom services to OneNet educational subscribers.
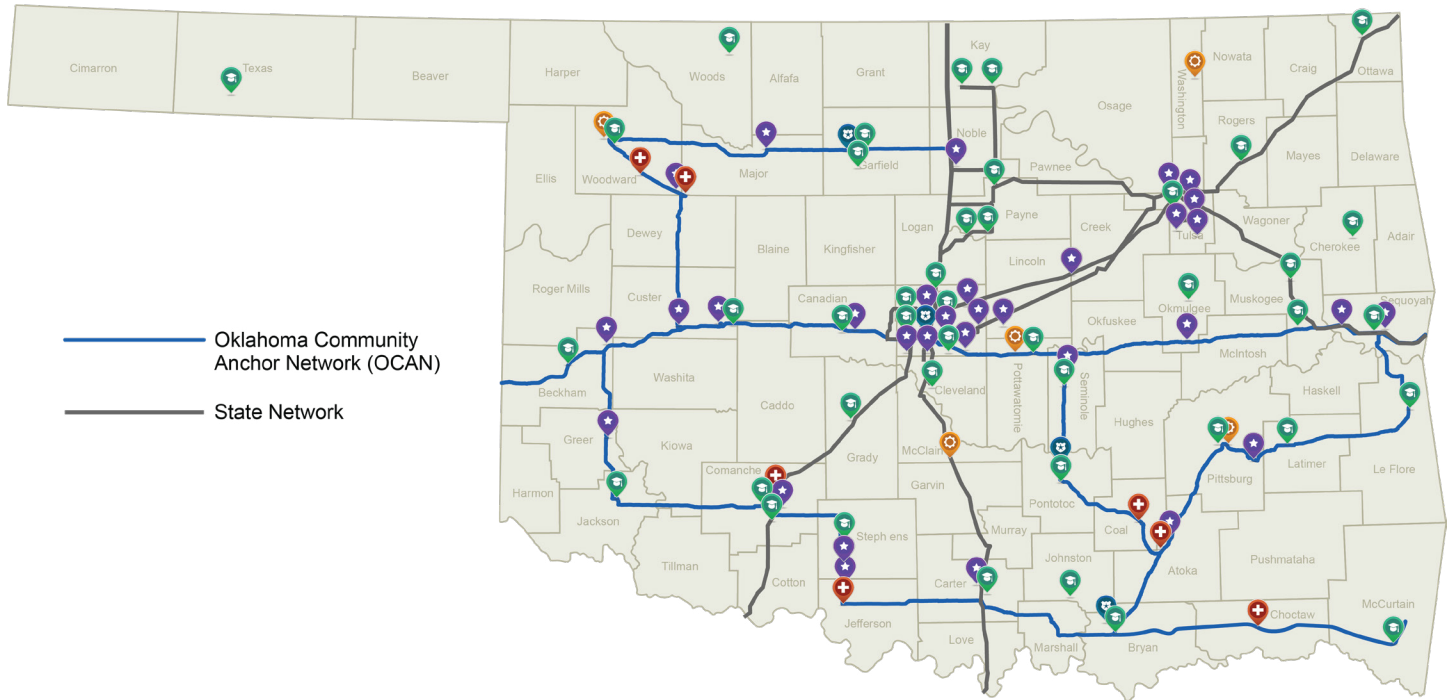
OneNet's Data Center

OneNet's data center provides colocation, virtual infrastructure, storage, and web and email hosting services. OneNet recently upgraded our enterprise storage for hosting virtual machines. Our subscribers utilize this virtual infrastructure for mission-critical applications that support campus or agency technology. Disaster recovery is built into our virtual infrastructure service, ensuring the continuity of subscribers' data and applications. OneNet also completes an annual SOC2 Type 2 audit of our control requirements for our data center, virtualization, and colocation services.

Security Initiatives

Cybersecurity is a growing concern for OneNet subscribers and a top priority for OneNet leadership. To help our subscribers manage cybersecurity issues, OneNet's engineering team has developed tactics for DDoS mitigation and other types of cyberattacks. We have expanded our managed firewall service options to better meet our subscribers' needs. Through participation in leading cybersecurity organizations, such as Multi-State Information Sharing and Analysis (MS-ISAC) and InfraGard, OneNet monitors threat intelligence to identify imminent threats to our network and subscribers.

ONENET NETWORK

OneNet Points of Presence

Higher Education Campus Locations	Career Technology Centers	Hospitals	Public Safety Agencies	Other

Legend:
- Oklahoma Community Anchor Network (OCAN)
- State Network