



Nevada Governor's
Office of Science,
Innovation and
Technology



2017 ANNUAL REPORT



**“ACCESS TO A HIGH-QUALITY
EDUCATION HAS NEVER BEEN
MORE IMPORTANT. IT IS THE
TICKET TO THE PATHWAY TO
SUCCESS.” –BRIAN MITCHELL, DIRECTOR**

OSIT MISSION

STEM: to coordinate and align efforts by K-12 and higher education, workforce development, and employers to improve science, technology, engineering, and mathematics (STEM) education and STEM workforce development so that Nevada's workforce can meet the demands of its growing economy.

BROADBAND: To coordinate the planning, mapping, and procurement of broadband to ensure connectivity across Nevada for schools, libraries, hospitals, clinics, and communities meets national standards.

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EXECUTIVE SUMMARY

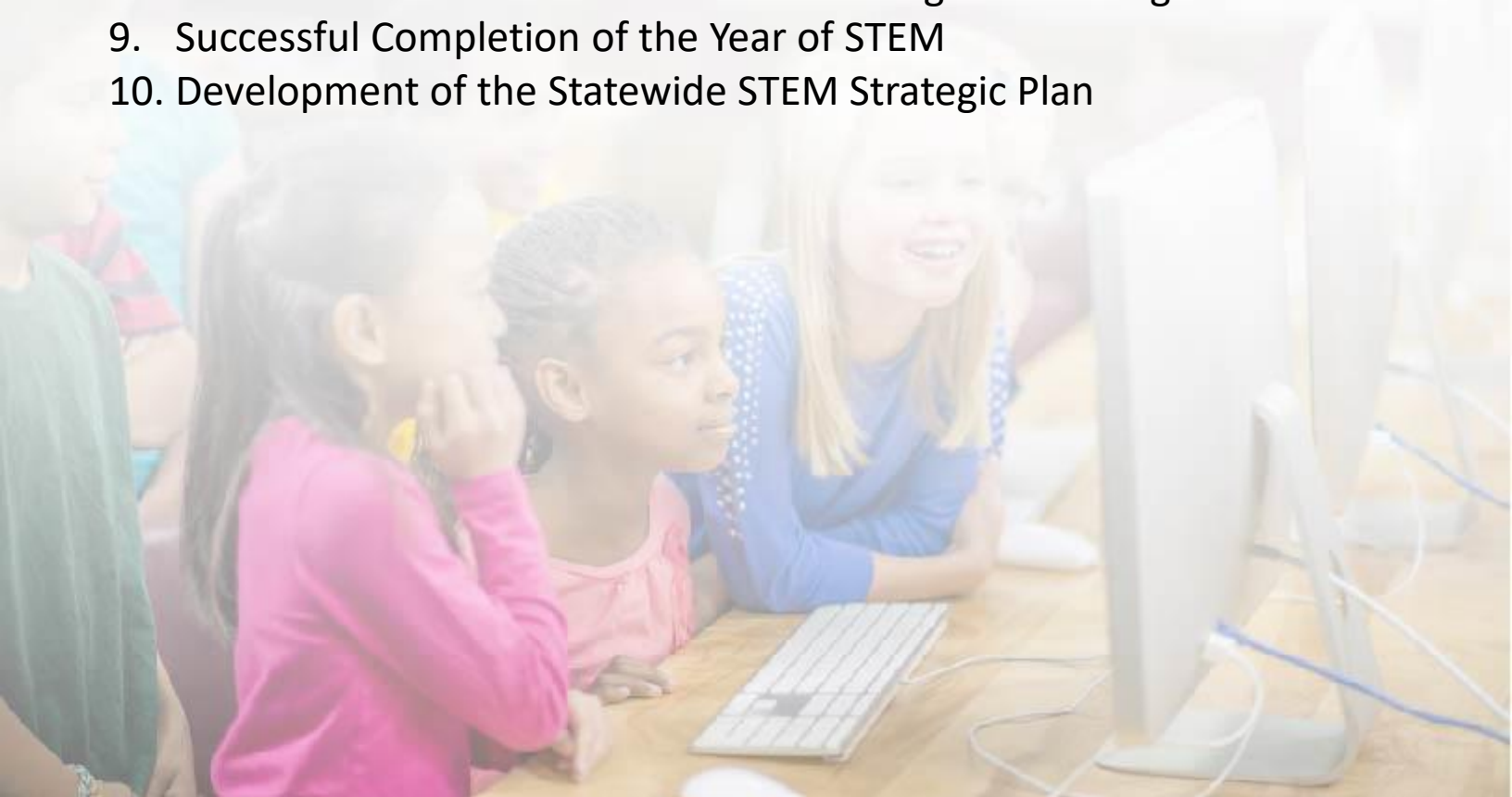
OSIT was created in 2015 with a dual mission: 1) ensuring all Nevadans have the skills necessary for the high-wage, high-skilled jobs of the New Nevada, and 2) making Nevada the most connected state in the country. We've been busy.

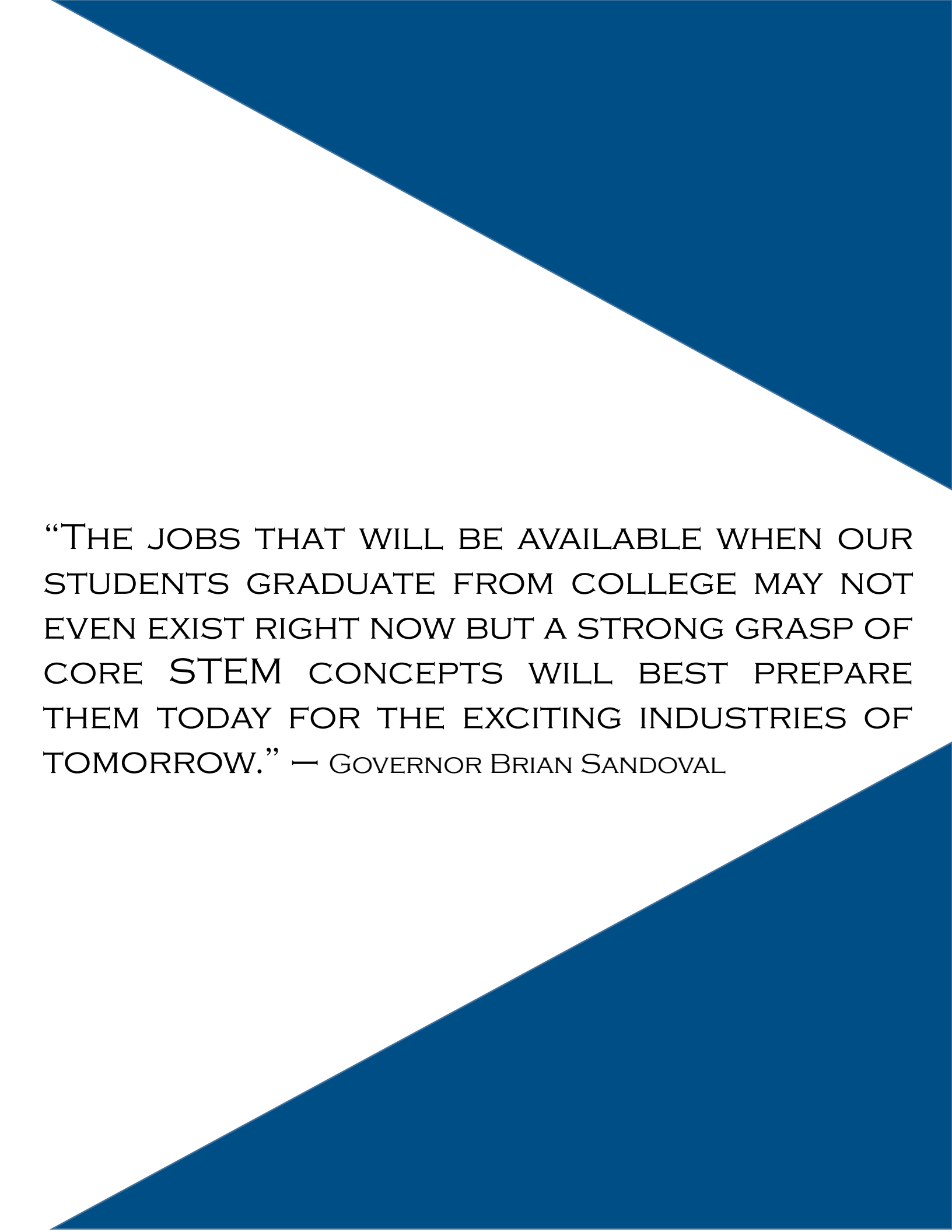
Last year, OSIT's efforts to advance STEM education and workforce development across Nevada resulted in increased awareness of the opportunities STEM education provides, and more opportunities for Nevadans to gain the skills they need. The launch of the Nevada Connect Kids Initiative in 2017 was groundbreaking for Nevada. Through this initiative, we traveled to every corner of the State providing technical and project management assistance, network engineering and design support, and procurement and implementation expertise to schools, libraries, and community anchor institutions interested in expanding internet connectivity.

While we've seen some successes in 2017, more work is needed. This report provides a brief snapshot of our work over the past year and a roadmap for where we're going.

2017 ACCOMPLISHMENTS

1. Launch of Nevada Connect Kids Initiative
2. Passage of SB 53
3. Designation of the first 8 Governor's STEM Schools
4. 2017 Broadband Summit
5. Creation of the STEM Advisory Council's List of Recommended STEM Programs
6. Passage of three OSIT-related Bills SB 200, SB 241, and AB 110
7. Two Student Recognition Events (Northern and Southern Nevada)
8. Creation of New STEM Workforce Challenge Grant Programs
9. Successful Completion of the Year of STEM
10. Development of the Statewide STEM Strategic Plan



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“THE JOBS THAT WILL BE AVAILABLE WHEN OUR STUDENTS GRADUATE FROM COLLEGE MAY NOT EVEN EXIST RIGHT NOW BUT A STRONG GRASP OF CORE STEM CONCEPTS WILL BEST PREPARE THEM TODAY FOR THE EXCITING INDUSTRIES OF TOMORROW.” — GOVERNOR BRIAN SANDOVAL

STEM WORKFORCE CHALLENGE GRANTS



16 new workforce
development
programs in 2017



\$1,937,121 in
grant awards



Clark: \$1,158,434
Washoe: \$513,235
Rural: \$265,452



2,013 new
trainees
per year



Average Wage:
\$52,229

STEM Workforce Challenge Grant Examples



The College of Southern Nevada created a new Unmanned Aviation Systems Engineering Technology Degree program



Carrington College expanded its registered nursing program to include evening and night classes resulting in 72 additional nurses trained each year.



Western Nevada College created a new AAS Degree in Cybersecurity/Information Assurance.

GRADUATE MEDICAL EDUCATION GRANTS

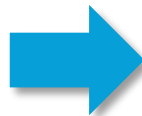
CURRENT GRANTS - FOCUS ON PRIMARY CARE AND MENTAL HEALTH



- ☐ **UNLV-** Psychiatry
- ☐ **UNLV-** OBGYN
- ☐ **Valley Health System-** Family Medicine, Internal Medicine, OBGYN, and Psychiatry
- ☐ **Mountain View-** OBGYN
- ☐ **Touro-** Geriatric Medicine
- ☐ **UNR-** Adult and Child Psychiatry
- ☐ **UNR-** Internal Medicine
- ☐ **UNR-** Geriatric Medicine
- ☐ **UNR-** Family and Community Medicine

10

\$10 million
granted 2015-
2017



95.5

New Annual
residency training
slots created

FUTURE GRANTS - FOCUS ON PHYSICIAN SHORTAGE AREAS

\$10 million will be awarded in 2017-2018. While funding will be prioritized for primary care and mental health, any specialty or subspecialty where the county ranks below the national average in physicians per capita is eligible for funding.



OTHER OSIT FUNDING PROGRAMS



STEM



K-5 STEM grants promote equitable access to and increased quality of STEM programs in elementary schools in order to increase student interest in STEM at an early age and better prepare students for a career pathway to success in the New Nevada. These grant programs align with three key strategies identified in the State STEM Strategic Plan.

K-5 STEM CLASSROOM GRANT

- ☐ Targeted at individual classrooms.
- ☐ Funds innovative, creative approaches to teaching STEM concepts.
- ☐ Funded with private dollars.
- ☐ Solicitation released in October
- ☐ Awardees will be announced in January, 2018.

K-5 STEM PROGRAM GRANT

- ☐ Targeted at the grade-level or school-level.
- ☐ Funds high quality, vetted programs on the STEM Advisory Council's List of Recommended STEM Programs.
- ☐ Funded with private dollars.
- ☐ Solicitation released in October.
- ☐ Awardees announced in January, 2018.



BROADBAND

Broadband grants provide new infrastructure, and improved connectivity speeds in school districts with funding coming from private dollars. E-rate funding is matched by federal dollars.

NEVADA CONNECT KIDS GRANTS

- ☐ Built new broadband infrastructure in Lander, Lyon, and Pershing school districts.
- ☐ Improved connectivity speeds tenfold.
- ☐ Impact: eight schools, 1,891 students.
- ☐ Funded with private dollars.



BROADBAND INFRASTRUCTURE DEVELOPMENT GRANTS

- ☐ Legislatively approved funding to build fiber infrastructure and draw down additional federal broadband dollars.
- ☐ Projects will be announced summer, 2018.

STEM ADVISORY COUNCIL

The mission of the Nevada STEM Advisory Council is to increase student interest and achievement in the fields of science, engineering, technology, and mathematics, leading students to fulfilling careers in the New Nevada economy. OSIT provides staffing and administrative support to the Council and carries out its duties.

GOVERNOR DESIGNATED STEM SCHOOLS

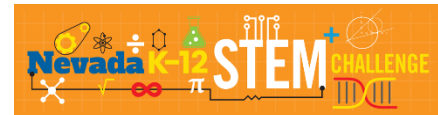
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Eight schools enrolling thousands of students were awarded the Governor STEM School Designation. Designation as a Governor's STEM School denotes that the school meets the highest standards of STEM instruction and is a model for schools around the state.

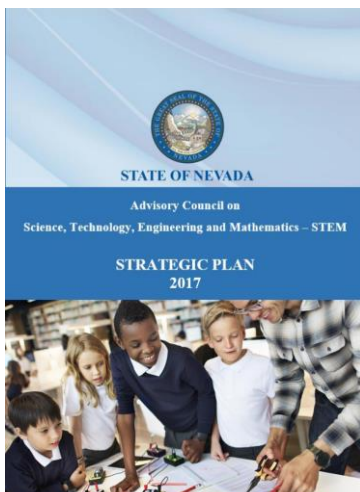


STEM STUDENT RECOGNITION

Governor Sandoval challenged students to apply STEM concepts to solve some of Nevada's biggest challenges, such as clean energy, drought, drones, and cybersecurity. Over 200 students participated in 2 recognition events at UNLV and TMCC to showcase their projects and interact with professionals from STEM industries.



STEM STRATEGIC PLAN



http://osit.nv.gov/STEM/STEM_Strategic_Plan/

COUNCIL SUBCOMMITTEES

The STEM Advisory Council has created four permanent subcommittees to focus on developing specific-issue strategies that align to the statewide strategic plan.

- ☐ Computer Science
- ☐ Community Partnerships
- ☐ Informal STEM Learning Environments
- ☐ Integrating Arts and Culture into STEM

STEMHUB



Information &
resources to
develop a vibrant
Nevada STEM
Workforce



STEM careers are
defining Nevada's
future. As the
demand for STEM
talent in Nevada
continues to grow,
Nevada STEM Hub
aims to share
resources that can
help educate
Nevadan's about
these vital careers and
motivate Nevada's
Kids to pursue STEM
career paths



www.Stemhub.nv.gov

Career Guide

Educators

Students/Parents

Corporate Partners

Events

Advocacy



STEMHUB



INFORMATION & RESOURCES TO DEVELOP A
VIBRANT NEVADA STEM WORKFORCE



5,690 UNIQUE VISITORS

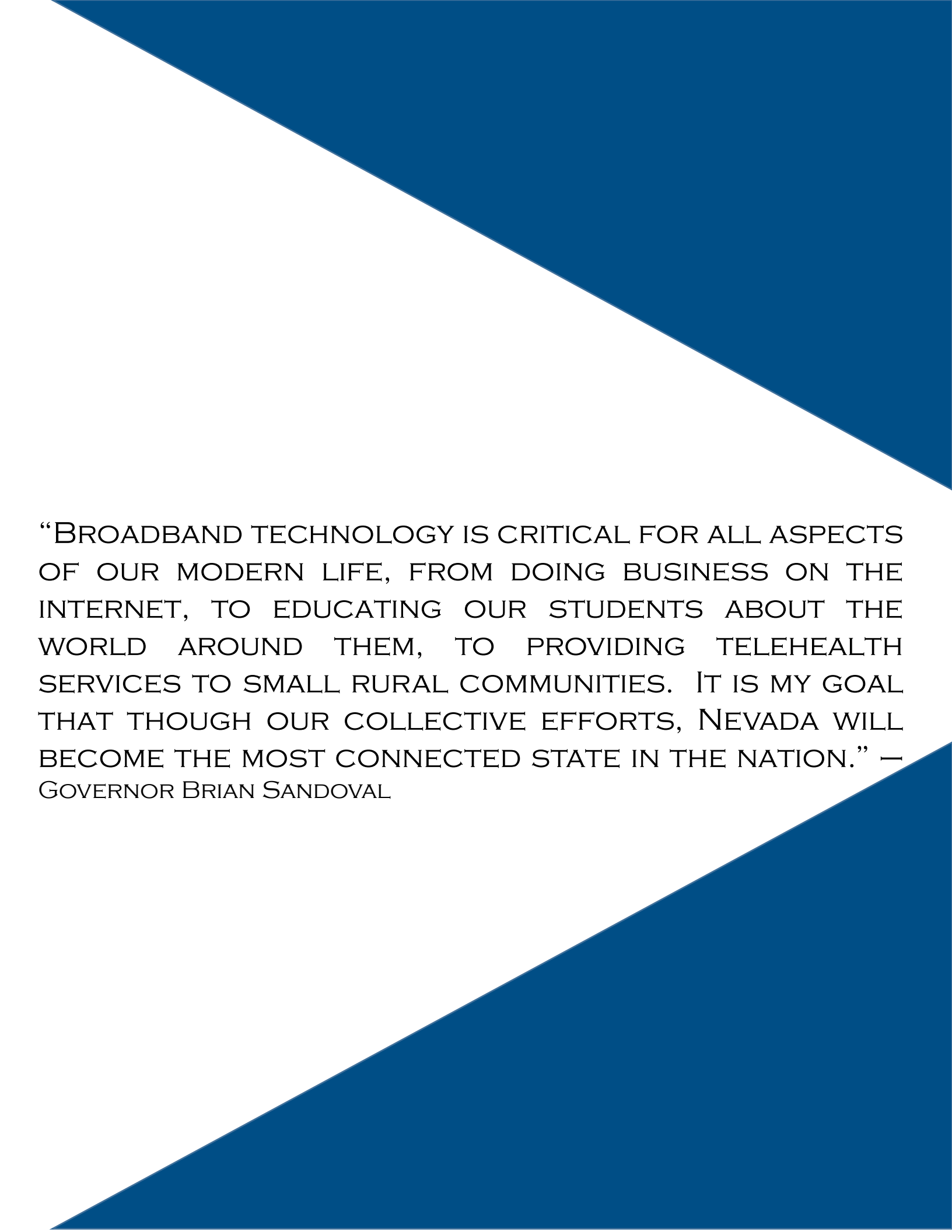


13,952 VIEWS*

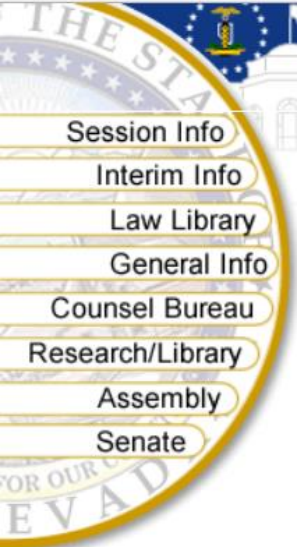


31,301 VIEWS*

*Began tracking in July, 2017

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“BROADBAND TECHNOLOGY IS CRITICAL FOR ALL ASPECTS OF OUR MODERN LIFE, FROM DOING BUSINESS ON THE INTERNET, TO EDUCATING OUR STUDENTS ABOUT THE WORLD AROUND THEM, TO PROVIDING TELEHEALTH SERVICES TO SMALL RURAL COMMUNITIES. IT IS MY GOAL THAT THROUGH OUR COLLECTIVE EFFORTS, NEVADA WILL BECOME THE MOST CONNECTED STATE IN THE NATION.” — GOVERNOR BRIAN SANDOVAL



SB 53

SB 53 IMPLEMENTS TWO POLICIES THAT SUPPORT AND INCENTIVIZES INVESTMENTS IN NEVADA'S FIBER INFRASTRUCTURE ESSENTIAL TO BROADBAND SERVICES IN NEVADA.

HIGHLIGHTS OF PROPOSED 2017 LEGISLATURE

- Authorizes NDOT to grant longitudinal access to Right-of-Ways (ROWs) controlled by NDOT to telecom providers.
- Authorizes NDOT to enter into agreements with providers that fairly compensate the Department through in-kind trade or monetary compensation for longitudinal access to certain ROWs or access to spare conduit; establishes regulation to govern the same.
- Creates a telecommunications Advisory Council to approve trade values and work on best practices for SB53.
- Expands the definition of "transportation facility" to include excess conduit, fiber assets, and related equipment.
- Establishes procedures for the valuation of the ROW.
- Allows NDOT greater latitude to enter into public-private partnerships that benefit from transportation facilities where it serves a public purpose.

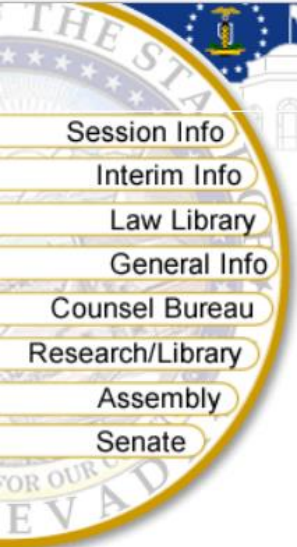
GOVERNOR APPOINTED TELECOMMUNICATIONS ADVISORY COUNCIL

Effective November 3, 2017 and expiring June 30, 2020, a Telecommunication Advisory Council was formed to work on best practices, valuation formulas, and Fair Fiber Trade Agreements. The council consists of individuals from the Governor's Office of Science, Innovation and Technology; NV Dept of Transportation; NV Dept of Education; Enterprise Information Technology Services; Rural Healthcare; NV System of Higher Education; and NV Dept of Public Safety.



TELECOMMUNICATIONS ADVISORY COUNCIL MEMBERS:





SB 53

DIG ONCE: REQUIRES THE STATE TO ADD EXCESS CONDUIT INTO ANY ROAD CONSTRUCTION PROJECT

FIBER TRADING: ALLOWS TELECOMMUNICATION PROVIDERS ACCESS TO EXCESS CONDUIT IN EXCHANGE FOR HELPING THE STATE EXPAND FIBER IN NEVADA

ADVANTAGES OF DIG ONCE AND FIBER TRADE AGREEMENTS:

- Reduces deployment time by:
 - ✓ Making access to the Right-of-Ways (ROW) easier
 - ✓ Being cooperative with other state and federal agencies
 - ✓ Keeping the ROW open at all times, meaning NO EXCLUSIVE access by any one provider
 - ✓ Remaining provider agnostic
- Expands infrastructure throughout the entire State.
- Expands fiber infrastructure into underserved and unserved areas.
- Helps cities and counties attract fiber telecom providers.
- Ability to bridge the Digital Divide.
- Protects newly and recently paved roads and sidewalks, enhancing the uniformity of construction.
- Ensures efficient, non-duplicative placement of infrastructure in the ROW.
- Reduces overall cost of all underground work in the ROW, both utility and telecom related for public and private parties.
- Reduces construction costs by reducing the long-term cost of building communications facilities by capitalizing on significant economies of scale.

KEY BEST PRACTICES

- Bring providers in at the planning stage, by hosting a bi-annual and annual planning meeting to overlay state projects with the providers.
- Establish a single point of contact (POC) with NDOT and OSIT for the State to make it easier to manage inquiries.
- Establish valuations for ROWs in each county. Re-evaluate every 5 years.
- Establish ongoing geographic information system (GIS) mapping of fiber lines and fiber assets.
- Do trade agreements other than fee based charges.
- Values are kept on a balance sheet and reviewed annually.
- Prioritize projects suitable for additional construction based on a scoring mechanism.
- Develop a refined estimate of the incremental costs during the design phase.
- Develop a standard engineering specification for dig-once conduit.
- Develop a procedure to systematically track and manage construction projects.



NEVADA CONNECT KIDS INITIATIVE

GOALS:

- ✓ INCREASE THE AMOUNT OF E-RATE FUNDING THE STATE APPLIES FOR
- ✓ INCREASE THE PERCENTAGE OF E-RATE REQUESTS THE STATE RECEIVES
- ✓ EVERY STUDENT ATTENDS A SCHOOL THAT MEETS THE FCC CONNECTIVITY STANDARD

2017 LEGISLATURE



In 2017, the Legislature appropriated \$2 million to be used as state match to support the district's E-rate applications and draw down additional federal funding from the Federal Communications Commission. Funding for this initiative will be used to pay for broadband development, broadband deployment and improvements for schools and libraries.

WHAT IS E-RATE?

E-rate is the nation's largest education technology funding program for K-12 schools and libraries ensuring affordable access to Telecommunications and Internet. Funding is provided in the form of "discounts" for eligible services based on the income level of students, which is derived from the number of students who qualify for free or reduced price lunches through the National School Lunch Program (NSLP).

PARTNERSHIPS

After recognizing the E-rate funding gap in Nevada, OSIT created partnerships to work with every school district, charter school, and library ensuring the Nevada Connect Kids Initiative goals are met. OSIT enlisted the expertise of **EducationSuperHighway** and contracted an in-house team of experts through an RFP process from **E-Rate Central**. Both work closely with all schools and libraries to file all forms, write RFP's, aid in procurement, create network design plans, and overall district assistance.

E-RATE CENTRAL

This partnership has proven to be hugely successful by the number of school districts and libraries that have filed in the E-rate cycle starting July 1, 2017.

- | | |
|-----------------------------------|------------------------------------|
| <input type="checkbox"/> Lincoln | <input type="checkbox"/> Esmeralda |
| <input type="checkbox"/> Elko | <input type="checkbox"/> Lyon |
| <input type="checkbox"/> Mineral | <input type="checkbox"/> Clark |
| <input type="checkbox"/> Pershing | <input type="checkbox"/> Eureka |
| <input type="checkbox"/> Washoe | |
| <input type="checkbox"/> Storey | |



Education
SUPERHIGHWAY

BROADBAND SUMMIT

The 1st Governor's Broadband Summit was held in Carson City, November 6, 2017 at the Nevada State Capitol Building discussing the Governor's vision for broadband connectivity in Nevada. Governor Brian Sandoval kicked off the Broadband Summit with opening remarks followed by Evan Marwell, founder and CEO of EducationSuperHighway.

BROADBAND SUMMIT GOAL: To provide all attendees with valuable knowledge on topics of interest, resources to tackle ongoing challenges, and opportunities to connect with broadband experts from across the state and country.

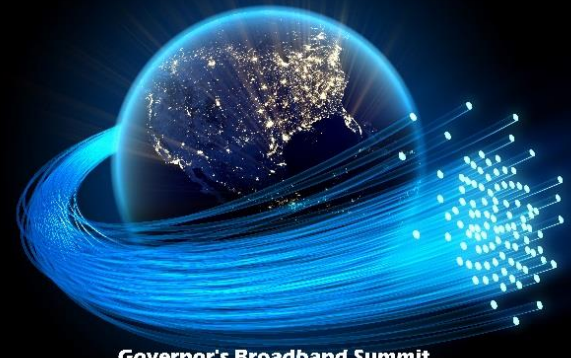
TOPICS included:

- **Nevada Connect Kids Initiative- E-Rate**; presented by E-Rate Central, Mighty River, and EducationSuperHighway
- **Telemedicine**; presented by Renown Health, Humboldt General Hospital, and University of Nevada Reno
- **Cybersecurity**; presented by Nevada Homeland Security, Renown Health, and Enterprise Information Technology Services (EITS)
- **SB53**; presented by NDOT and OSIT
- **Telepharmacy**; presented by Pyramid Lake Paiute Tribe Vice-Chair and Health Director

KEYNOTE SPEAKERS included:

- ✓ **Susannah Spellman** – Executive Director for the US Unified Community Anchor Network program at Internet 2, discussed Broadband Driven Transformation
- ✓ **Douglas Kinkoph** – Associate Administrator of National Telecommunications Information Administration, discussed the Broadband USA initiative promoting broadband deployment & adoption across communities nationwide.

Kelly Clark, USDA.... "thank you so much for having USDA at the Broadband Summit and giving Rocky Chenelle time on the agenda to present information. It was a great conference- especially loved the networking opportunities. Your lunch speakers were excellent – as was the food. Well done!"



Governor's Broadband Summit
November 6, 2017 | State Capitol- Carson City

Economic Development Authorities

EDUCATION

LOCAL & STATE GOVERNMENT

BUSINESS

HEALTHCARE



Broadband Service Providers

SPONSORS INCLUDED: ATT, WestNet, CenturyLink, Switch, Zayo, and Renown Health

TELEMEDICINE GRANTS

Telehealth is emerging as a critical component of healthcare solutions in Nevada. Telehealth can aid to deliver better healthcare by connecting rural providers and the patient to services at distant sites and promote patient-centered healthcare.

TELEHEALTH INCREASES ACCESS TO HEALTHCARE

- Remote patients and facilities can more easily obtain clinical services
- Remote hospitals can provide emergency and intensive care services



OSIT TELEHEALTH GOALS

- Work with Indian Tribes/Colonies to obtain Telemedicine, including Telepharmacy by connecting them with technology and healthcare solutions
- Work with remote and rural hospitals and clinics to expand their telehealth programs
- Work with NV Dept of Corrections to obtain the necessary bandwidth and telecommunications technologies to have a robust telemedicine program by 2025.

How is OSIT DOING THIS?

- ☐ **STRATEGIC PLANNING MEETINGS WITH PARTNERS:** Renown, NDOC, USDA, EITS, Tribes, & clinic affiliates (27 total affiliates)
- ☐ **CREATED ACTION TEAM FOR NEVADA DEPT OF CORRECTIONS (NDOC) INITIATIVE**
- ☐ **ON-SITE VISITS** (17 completed)

- ☐ **PRESENTATIONS** (4 completed)

☐ **FEDERAL GRANTS**

- ✓ Distance Learning Grants (Currently working with Lovelock Indian Colony)
- ✓ Rural Healthcare Program



2017 LEGISLATIVE SUMMARY

1. **SB 53-** Implemented two policies to develop and expand broadband connectivity throughout the State: “Dig Once” and “Fiber Trading”. Dig Once requires the State to add excess conduit into any road construction project. Fiber trading allows telecommunications providers to access this excess conduit in exchange for helping the State expand fiber elsewhere in Nevada.
2. **SB 200-** Requires the State to establish K-12 computer science standards and also requires every high school to offer a class in computer science by 2022. Provided funding for professional development and formally established a Computer Science Subcommittee of the STEM Advisory Council.
3. **SB 241-** Establishes the requirements for students to earn a STEM or STEAM seal on their high school diploma, signifying they have attained a high level of proficiency in STEM or STEAM.
4. **AB 110-** Establishes a competency-based education (CBE) pilot program and created a competency-based education network housed at the Department of Education.
5. **College and Career Readiness Grants-** \$5 million in each year of the biennium available to middle and high schools. About 50 percent of the funding is allocated to fund STEM.
6. **Broadband State Match-** \$2 million over the biennium to leverage and draw down federal E-rate funding used in fiber construction projects to schools and libraries.
7. **Increase in STEM Workforce Challenge Grant Funding-** Funding was increased by the legislature from \$3 million to \$4 million.
8. **Graduate Medical Education-** The legislature continued to fund \$10 million over the biennium to grow Nevada’s physician workforce by establishing new and expanding existing graduate medical education residency and fellowship programs.

2017 LEGISLATIVE PERFORMANCE

MEASURES

Measure	Goal	Actual
Conduct a survey of 600+ schools to identify broadband speeds, limits, costs per megabit and availability of solutions; Inventory surrounding fiber infrastructure and available providers to identify deficiencies.	80% Schools Surveyed	80% Schools Surveyed
Conduct broadband strategic planning meetings every year with stakeholders throughout the northern, southern and eastern areas of Nevada.	1	2
Identify and recognize schools offering rigorous, evidence-based, STEM-focused coursework and programs, meeting the requirements of the Governor's STEM School Designation.	15	8
Grow the number of visitors to the STEMhub website, providing students, parents, teachers, and leaders in business and community with up-to-date, accurate information about STEM career pathways including the top occupations in Nevada's STEM industry sectors and the secondary and postsecondary requirements of those occupations.	2,000	5,690
Develop STEM-focused workforce training programs that meet the needs of employers.	15	20
Plan, coordinate, and facilitate the submission of applications for federal telemedicine grants leading to the connection of all rural hospitals, health clinics, and state correctional facilities to a broadband connection sufficient to provide telehealth services.	1	1

OSIT STAFF

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