

K-12 Broadband State of the States Report

EducationSuperHighway - January 2017 release

About the State of the States report

The second annual State of the States report on K-12 broadband connectivity will be released in January of 2017. The report is intended to help governors and state leaders find out where their public schools stand and identify opportunities for action to connect all students to the promise of 21st century digital learning. **The State of the States report will show every state's status relative to K-12 Internet connectivity targets and relative to state peers.**

We will release the State of the States report to a wide range of audiences including governors, state agency leaders, federal policy makers, national and local media, and school administrators and educators.

About the data

The State of the States report is based on data from the publicly-available K-12 school district E-rate filings collected by the Federal Communications Commission and administered by the Universal Service Administrative Company. EducationSuperHighway verified and analyzed completed 2016 E-rate applications and conducted extensive nationwide outreach to verify school districts' network infrastructure. The data represents K-12 public schools only and does not include private schools, independent charter schools, or libraries.

Governor snapshots

The report will shine the light on governors who have made K-12 school upgrades a priority and taken action to improve school connectivity. **There are three ways that a governor may be represented in the report:**

Action required before January 3, 2017

Please direct to Nell Hurley,
Director of Marketing and Communications:
nell@educationsuperhighway.org

☑ TO DEMONSTRATE YOUR COMMITMENT TO CONNECTING ALL STUDENTS:

- If your status is Pending, provide a quote from the governor or approve one of the suggested quotes.

☑ TO BECOME A LEADING GOVERNOR IN THE REPORT:

- Provide one or more actions that you have taken to upgrade broadband in schools in the last year.

☑ TO HIGHLIGHT THE PROGRESS MADE IN YOUR STATE:

- Create a media advisory to be released after the launch of the report or request a template.

🏆 **Leader**

Progress on K-12 connectivity
Alabama | **LEADER**

35,860

STUDENTS CONNECTED IN 2016
now have the minimum connectivity they need

202,914

STUDENTS LEFT BEHIND
without the minimum connectivity they need

CONNECTIVITY

91% of school districts representing 530,741 students meet the minimum connectivity goal of 200 Kbps per student.
This is up from 86% in 2015.

UPGRADES

25 school districts upgraded their networks in 2016 leading to 45,208 students getting more bandwidth.

FIBER

99% of schools in Alabama have the fiber connections needed to keep up with growing bandwidth demands from students and teachers.
This is up from 92% in 2015.

WI-FI

65% of school districts report sufficient Wi-Fi in all their classrooms.
\$40M of E-rate funding remains to support Wi-Fi network upgrades in Alabama.

AFFORDABILITY

12% of school districts are matching the bandwidth they are getting for their budgets.
This is down from 20% in 2015.

Gov. Bentley is taking action to upgrade schools in Alabama.

“ In order to prepare our children to compete in tomorrow's workforce, we need to give them with a high-quality education that includes both classroom instruction and digital learning. We have made great strides in adding Wi-Fi to classrooms, laying fiber backbones and delivering this access to digital learning, and we are committed to a continued focus in this area.

Actions to upgrade schools in 2016

- ☑ Signed the Alabama Ahead Act to get state \$4M of matching funds for Wi-Fi.
- ☑ Please let us know if any new state actions you are taking to improve K-12 connectivity.

Opportunities for further action

- ☐ Upgrade school district networks
- ☐ 202,914 students do not have the minimum connectivity to use technology in the classroom.
- ☐ Make broadband more affordable
- ☐ 99% of school districts could get more bandwidth for their budgets.
- ☐ Establish a state matching fund
- ☐ Support 120 schools in need for their connections.

📝 **Committed**

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Alabama | **COMMITTED**

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🕒 **Pending**

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Alabama | **PENDING**

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Gov. Bentley can take action to upgrade schools in Alabama.

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EducationSuperHighway is the leading non-profit focused on upgrading the Internet access in every public school classroom in America. We believe that digital learning represents an unprecedented opportunity to provide every student with equal access to educational opportunity and that every school requires high-speed broadband to make that opportunity a reality.



Progress on K-12 connectivity

South Carolina | LEADER 

33,735

STUDENTS CONNECTED IN 2016

now have the minimum connectivity they need

0

STUDENTS LEFT BEHIND

without the minimum connectivity they need



CONNECTIVITY

100% of school districts representing **696,140 students** meet the minimum connectivity goal of 100 kbps per student.

This is **up from 97%** in 2015.



UPGRADES

48 school districts upgraded their networks in 2016 leading to **380,681 students** getting more bandwidth.



FIBER

99% of schools in South Carolina have the fiber connections needed to keep up with growing bandwidth demand from students and teachers.

This is **up from 93%** in 2015.



WI-FI

76% of school districts report sufficient Wi-Fi in all their classrooms.

\$36M of E-rate funding remains to support Wi-Fi network upgrades in South Carolina.



AFFORDABILITY

0% of school districts are maximizing the bandwidth they are getting for their budgets.

This is **the same as 0%** in 2015.

Gov. Haley is taking action to upgrade schools in South Carolina



“ Technology, connectivity, and digital learning are critical to unleashing our students' potential. When we invest in them, we equip students with the skills their future employers will demand.

Actions to upgrade schools in 2016

- Recommended resources for the wiring and devices necessary to support school-wide Internet access at peak levels and provided resources from the Division of Technology Operations through the South Carolina Department of Administration for those districts lacking the internal IT support necessary to maintain the network.
- [Please let us know of any new state actions you are taking to improve K-12 connectivity.]

Opportunities for further action

- Make broadband more affordable
100% of school districts could get more bandwidth for their budgets.
- Establish a state matching fund
5 of your 1,146 schools do not have fiber connections.

About the Metrics

K-12 Broadband State of the States Report



CONNECTIVITY

This metric shows the percentage of school districts in the state meeting the Federal Communications Commission's (FCC) Internet access goal. The **Minimum Goal** metric measures the percent of school districts meeting the FCC's 100 kbps per student goal (we did not include staff in our analysis). This metric should be viewed as a minimum Internet access threshold that all school districts should achieve in order to implement digital learning. The number of students with the minimum connectivity for digital learning is the extrapolated number of students enrolled in districts meeting the goal as reported in the 2013-14 NCES data set.



UPGRADES

This metric shows the number of school districts that have upgraded their Internet access bandwidth from 2015 to 2016 and the number of students in those districts. Only districts that had verified data in 2015 and 2016 are included. As a result, this metric may slightly underestimate the total number of school districts and students that upgraded. We consider upgrades an increase in bandwidth of 11% or more from 2015 to 2016 or an increase in bandwidth of at least 50 Mbps.



FIBER

This metric assesses the availability of scalable infrastructure in the state. The FCC's goal is for every school to have a broadband connection capable of scaling to 10 Gbps. Today, only fiber optic connections are capable of meeting that goal.

- **Method:** We identified the schools that have a fiber optic vs. a non-fiber optic connection. For any schools where the connection type was unknown, we applied assumptions based on extensive research.



WI-FI

The FCC provided every school district with a \$150 per student total "Category 2" budget from 2015-2019 to put Wi-Fi and other internal connections in classrooms. These metrics profile the state of Wi-Fi connectivity in schools as reported by E-rate applicants and the extent to which districts in a state have taken advantage of their Category 2 budgets.

- **Method:** This year, every school district that applied for Category 2 funding reported on the sufficiency of Wi-Fi for each school requesting funding. The percentage of sufficient school districts is determined by dividing the total number of school districts that reported "Completely" or "Mostly" (as opposed to "Sometimes" or "Never") by the total number of districts that reported on the sufficiency of their Wi-Fi.
- **E-rate funds available:** We calculated the total Category 2 budget remaining for 2017-19 in the state after subtracting funds requested in 2015 and 2016. We applied school district discount rates when available, otherwise we applied the aggregate state discount rate of school districts requesting Category 2 services.



AFFORDABILITY

The affordability of broadband is one of the major roadblocks preventing school districts from meeting the FCC's Internet access goals. The price benchmarks represent the 2015 price at which 30% of school districts were purchasing the corresponding Internet access circuit.

- **Method:** We calculated the percent of school districts in the state that should be getting more bandwidth for the amount they are spending. We assessed this by comparing the amount of bandwidth they are currently receiving to the amount they would be able to purchase if they used their budget to buy circuits at benchmark prices. A school district's Internet access budget is the total cost of all Internet access services, including both ISP costs and the cost of transport between the school district and the ISP. Shared costs for backbone circuits and ISP only services were distributed based on the number of students enrolled in the school district.

Internet Access Circuit Size	Price Benchmark (\$/Mbps)
10 Gbps	\$0.75
1 Gbps	\$3.00
500 Mbps	\$5.50
200 Mbps	\$9.00
100 Mbps	\$12.00
50 Mbps	\$14.00